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MANUAL

OF

MODERN GEOGRAPHY

MATHEMATICAL, PHYSICAL, AND POLITICAL

ON A NEW PLAN

EMBRACING A COMPLETE DEVELOPMENT OF THE RIVER
SYSTEMS OF THE GLOBE

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REFACE.

CONSIDERING the improved methods now generally adopted in teaching Geography, the ever-expanding dimensions of our own gigantic empire, the numerous additions recently made to our knowledge of foreign countries, and, as a consequence of these, the increasing interest felt by educated persons in every department of the science, the Author deems it superfluous to offer any apology for issuing the present Manual. As it differs, however, somewhat widely, both in matter and arrangement, from all its predecessors, it may be necessary here to describe its more prominent characteristics.

The work commences with a brief account of the relation of the Earth to the Solar system, and of the latter to the other worlds which people space.

The form and materials of the globe, the configuration of its surface, its climate, mineralogy, geology, botany, zoology, and ethnography, are next discussed; and thus a foundation is laid for the subsequent details in Physical and Political Geography.

The individual continents and minor divisions of the earth's surface then pass successively under review. Each of these is viewed from many sides, and the results presented to the learner in a corresponding series of brief but pointed sections.

The precise *order* in which the different sections should stand was a subject of much careful reflection. While in most other works on geography the physical and political stand widely apart, they are here intentionally combined; and so made, not only to reflect mutual light on each other, but also to correspond more closely with the manner in which the realities to which they refer interpenetrate one another in nature.

Without adverting to the contents of each of the sections individually, the Author can here only notice those of them in which he has departed most widely from the usual routine. The first departure occurs under the heading POSITION AND BOUNDARIES. It is singular what confused notions prevail, even among otherwise accurate geographers, regarding the relative position of the best-known places. For example, how few ordinary students of geography could say, without consulting globe or map, what other important places have the same latitude and longitude as London, Edinburgh, or Madrid! To remedy this, a single sentence is uniformly added to this paragraph, mentioning all the most important places on the globe lying on the same parallel and meridian with the capital of the country under review, or with the central point of the latter, should the capital happen to be situated at some distance from its centre. In addition to the greater familiarity with the relative position of places which is thus communicated, these brief notices, it is hoped, will be found serviceable to the student when comparing the climates, botany, and zoology of different countries.

Under the AREA of each country, in addition to the information usually given, its magnitude is invariably compared with that of the British Isles collectively, or with one or other of the kingdoms composing them; and a similar comparison is drawn regarding its POPULATION, which in every instance embodies the results of the most recent census or estimate.

The articles entitled "POLITICAL DIVISIONS" have been thoroughly elaborated, in accordance with the best maps, and a new principle of arrangement adopted. Instead of adhering to the prevailing custom of giving under each province or county a dry list of cities and towns wholly unconnected by any system of arrangement, the writer had no hesitation in availing himself of a principle equally simple and beautiful with which nature supplied him. He refers to the important physical law, that *all the cities and towns on the earth's surface, whether ancient or modern, stand on the banks of rivers, or on the sea-coast.*

The exceptions to this law are few and easily explained, while the causes that have led to so striking a result are sufficiently obvious. Till very recently, when the canal and the railroad have to some extent supplied their place, rivers have in all ages formed the great highways of commerce. In every land the banks of rivers present the most fertile portions of the country, as the valleys of the Tigris, the Euphrates, the Nile, and the Jordan; and also formed the earliest seats of civilisation—as, for example, Nineveh, Babylon, Thebes, and Damascus, the origin of which dates back to the dawn of history. So close, in short, is the connection between the rivers of a country and its towns, that there is no exaggeration in saying that the rivers have created the towns; or that, without the rivers, the towns would have had no existence. In no system of geography founded on natural principles can this connection be overlooked. The political boundaries of a country will vary from time to time with the varying fortunes of its rulers, but its rivers will continue to flow in their wonted channels; and the cities that grace their banks will continue to pay them their wonted homage. Rivers are majestic trees that have their roots fixed in the ocean, and their tops reaching the clouds: the great cities of the world hang around their stems; while the towns and villages cluster like fruit on their branches.

Hence, though the Manual embraces many other important features, it was the intimate connection subsisting between rivers and towns that led to its production, and that forms the principal basis on which it rests. While the influence of this connection can be traced in almost every page, three of the twenty-four sections usually devoted to each country are entirely occupied with its elucidation—viz. those entitled "Principal River-Basins," "Political Divisions," and "Table of Rivers and Towns." The first of these shows the dimensions of all the larger river-basins, and indicates at a glance how many provinces or counties they embrace either wholly or in part. In the second it necessarily occupies a somewhat subordinate place; for not only must the towns with their population be placed in the foreground—the name of the river being placed after them within parentheses—but the boundaries of the provinces continually interrupt the continuity of the rivers. The capital of a province is, moreover, placed first, even though it should not stand nearest to the river's mouth; and, finally, only the larger towns in each province have the rivers on which they stand indicated, lest the learner should be overburdened with their multiplicity. All the towns, however, whose population ranges between 5000 and 10,000 are immediately subjoined, but in a smaller type, to indicate that they may be omitted in a first perusal. The only departure from this is in the case of the United Kingdom, in treating of which it was considered necessary to embrace towns of a much smaller population.

But the third of these paragraphs, or those denominated "Tables of Rivers and Towns," are those to which the Author would direct most special attention, as presenting at once the most original portion of his Manual, and the fullest exhibition of his peculiar method. An immense amount of time and labour has been expended on these tables; but, judging from experience, the Author is convinced that their importance to the student, and the labour and time they will save to the teacher, fully justified the sacrifice; for he is aware that many of the most successful teachers of geography are in the daily habit of drilling their classes more or less in accordance with the method here so fully developed; but having no reliable guide to direct them, each of them is obliged to draw out a scheme for himself, from such materials as he may have at command.

Having said so much on the "River System," properly so called, space will not allow an equally minute description of the other paragraphs; suffice it to say, that similar care and patience have been bestowed on all of them. The MOUNTAIN-RANGES and the LAKES are more systematically arranged, and their connection with the river-basins more closely exhibited, than in any other existing Geography.

The sections describing the CLIMATE, GEOLOGY, MINERALS, BOTANY, and ZOOLOGY of the different countries, have been drawn up with the greatest care, and from the most recent and accurate authorities; while those that discuss their ETHNO-

GRAPHY are the result of much earnest research. Under the last-named head have been sketched, not only the race, religion, national character, form of government, and education of the different nations, but their language and literature have also received the attention to which they are entitled. The former of these is briefly described, and its *relation to other languages* carefully stated; while the latter embraces elaborate lists of all the more *Eminent Names* that adorn the literature of their country. The ethnographical sections are followed by brief descriptions of the Army and Navy, Public Debt, Revenue and Expenditure, Commerce, Manufactures, Exports and Imports, Inland Communication, and Foreign Possessions (if any) of the various States, in the preparation of which the most recent statistics have been consulted.

The *pronunciation* of geographical names is invariably a matter of deep interest, alike to teachers and pupils. Instead of following the prevalent custom of giving the pronunciation of difficult words, all arranged in one general catalogue, the Author considered it much more conducive to the student's improvement to insert, under each individual country, short but explicit *Rules* founded on the peculiar genius of its own language, and followed by appropriate examples.

The DESCRIPTIVE NOTES, which are appended to the Political Divisions, are considerably more numerous than is customary in geographical manuals, especially the notes on the counties and towns of the British Isles, and all other parts of the British Empire. In following this course, the Author was not only guided by his own experience as a teacher, but also by the oft-repeated advice of many able and successful educationists, all of whom were of opinion that *numerous, brief, but pointed notes* formed an indispensable requisite in any manual intended for the young. It is not every sort of information, however, that will interest boys; but while nothing very important has been omitted in connection with any place, it is hoped they will find something which they can easily remember in connection with all.

The Author cannot conclude these observations without expressing his deep obligations to those valued friends who so generously assisted him in his self-imposed task. His best thanks are due to the Rev. M. Mackay, Fordyce, for his aid in connection with the topographical sections, the minuteness and accuracy of which are in a great measure the result of his unwearied labours : to the Rev. H. Nicoll, Auchindoir, who furnished several of the lists of distinguished literary names : and, above all, to A. Keith Johnston, Esq., Her Majesty's Geographer for Scotland, for the many valuable items of recent information with which he favoured the Author during the composition of his Manual, and for his great kindness in volunteering the final revision of the proof-sheets. Great aid has also been received throughout from the various published works of this eminent geographer, especially from his admirable *Dictionary of Geography*, and the new edition of his *Physical Atlas of Natural Phenomena*, which will long remain the great *thesaurus* from which other writers will draw their most valuable materials, and the publication of which has formed an era in the annals of physical geography. His various school atlases have also been constantly referred to, and one of them in particular stands in the closest relation to this Manual ; Mr Johnston having introduced into the new edition of his beautiful *School Atlas of General Geography* all the political divisions, and, as far as possible, all the names of places, contained in the Manual. The two works will, therefore, mutually illustrate each other, and form, it is hoped, inseparable companions. The Author need scarcely say with what satisfaction he regards this arrangement, for assuredly there is no other school atlas known to him with which he would so readily link the fortunes of his Manual.

RHYNIE, *January* 1861.

POSTSCRIPT TO PREFACE.

Since the following sheets were sent to press, various changes have taken place in the political relations of Italy. Parma, Modena, and Tuscany, having expelled their former sovereigns, have been annexed to Sardinia ; while, by way of compensation, Savoy and Nice have been ceded to France. Still more recently, the Sardinian general, Garibaldi, having successfully raised the standard of revolution in Sicily, has crossed the Strait of Messina, and overrun the entire Neapolitan territories, which, together with the Pontifical States, have been transferred to the allegiance of Victor Emmanuel, now the sovereign of the " Kingdom of Italy." Meanwhile, the Pope, protected by a French army, retains possession of Rome, while Francis II. is closely besieged in Gaeta. In regard to other countries, the principal items requiring correction are the following : By the census of 1860, the population of the Russian empire is now 68,931,728, including 20,174,158 serfs. The new census of the United States, not yet fully completed, gives the population at about 32,000,000, including Oregon, now admitted into the Union with the full privileges of a State. In British India, the Punjab and North-West Provinces have been erected into separate Presidencies ; while in October 1860, British Kafraria was proclaimed a distinct colony.

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TEXT-BOOK OF GEOGRAPHY.

GEOGRAPHY is that science which has for its object the description of the surface of the Earth, or of that member of the Solar System which forms the abode of Man.

Though in regard to practical importance it occupies the foremost place among the physical sciences, it has been the last to receive the attention which is due to it. It consists of two principal branches—viz. Ancient Geography, which embraces the lengthened period intervening between the earliest dawn of history and the fall of the Roman Empire; and Modern Geography, which extends from that event to the present time. The latter is subdivided into four departments—viz. Mathematical, Physical, Political, and Historical.

Mathematical Geography treats of the earth in its relations to other celestial bodies; of its motions, form, and magnitude; and of the true position of places on its surface.

Physical Geography treats of the configuration of the Earth's crust; the materials of which it is composed; the soil and climate that prevail at different parts of the surface; and the effect of the latter on its living inhabitants—plants, animals, and man.

Political Geography—the only branch of the science which received adequate attention in the schools of this country till of late years—treats of the artificial or political divisions of the surface into empires and states; their extent, population, and material resources; their government, people, religion, language, and civilisation.

Historical Geography endeavours to establish when and by whom the different countries were first peopled; the political changes which they have subsequently undergone; and especially the progress of geographical discovery in modern times.

The first and second of these branches require separate consideration; the third and fourth will be treated of in connection with the individual countries.

PART I.

MATHEMATICAL GEOGRAPHY.

1. Position of the Earth and its Relation to other Worlds.—The earth on which we live is not to be regarded as an isolated, independent body, having no relations to other worlds; but as one of the members of a large family of similar bodies collectively called the Solar System, all the parts of which are united in one beautiful and harmonious whole by the mysterious power of gravitation.

The Solar System.—This system is so named from the fact that the sun (Lat. *sol*) is by far the largest body belonging to it—that he is placed in the centre, all the other members of the system revolving around him, either directly or indirectly—and especially to distinguish it from the numberless other systems that are located around it in universal space, each of which has probably its own sun or star as the immediate centre of its light, heat, and gravitating power. So far as presently known, the solar system consists of eighty-two distinct bodies—viz. the sun; eight large planets revolving around him in nearly circular orbits; fifty-three planetoids, or smaller planets, between the orbits of Mars and Jupiter, supposed by some to be the fragments of a large disrupted planet; twenty satellites or moons, one of which belongs to the earth, and all the others to the four most distant planets; besides a host of comets, which move in extremely elliptical orbits.

Only a very few of this large number were known to the ancients—viz. the Sun, Earth, Moon, Mercury, Venus, Mars, Jupiter, Saturn, and a few of the more remarkable comets. All the remainder have been discovered since the invention of the telescope by Galileo in the beginning of the seventeenth century.—(*See below*, "Progress of Discovery.")

The centre of this wonderful piece of mechanism is occupied by the sun, a huge mass of opaque matter, 1,400,000 times the size of the earth, but surrounded by a luminous atmosphere. Though stationary in relation to the other members of the system, he is in reality advancing through space—carrying in his train his numerous retinue of planets, satellites, comets—with a velocity of 154,000,000 miles per annum. This velocity, however inconceivable, is exceeded fourfold by that of the earth in her annual circuit round the sun. The planets move around the sun in elliptical, but nearly circular orbits; for the most part in the same direction, though at various distances, velocities, and periods of revolution, as shown in the following tables (pp. 4, 5). The satellites perform similar elliptical orbits round their primaries; while the paths of the comets are highly eccentric, consisting for the most part of extremely elongated ellipses. (*See* KEITH JOHNSTON'S *School Atlas of Astronomy*, Plates VII. and VIII.)

Cause of Elliptical Motion.—This elliptical motion is the result of the composition of two forces acting on the planet simultaneously, but in different directions. The first of these is called the *centrifugal* or *tangential force*, and is that which the planet received from the hand of the Creator when originally launched into space. This force, if unrestrained by any opposing one, would carry the planet wholly away from the sun, and project it into the depths of infinite space. But it is opposed or counteracted by the *centripetal force*, a force always acting at right angles to it, and directed towards the sun, or rather towards the centre of gravity of the entire system—a point situated within that body, though at a great distance from its centre. The latter force, again, if acting alone, would cause the planet to move towards the sun in a straight line, and with continually accelerated speed. But as both forces are incessantly operating, the planet must, in giving obedience to each of them, describe a curvilinear path.

The curve so described will, in every case, be one of the *conic sections*—that is to say, it will be one or other of the various curves obtained by cutting a cone in all the possible directions. It will depend, however, on the particular circumstances of the case—viz. direction, distance, and velocity—which of the curves shall be described—*i. e.* whether a circle, an ellipse, a parabola, or an hyperbola. Thus, the orbit will be a *circle*, when the square of the tangential velocity is equal to the diameter of the circle multiplied by the centripetal velocity; it will be an *ellipse* when the former product is greater than the latter; a *parabola*, when the former product is exactly twice as great as the latter; an *hyperbola*, when more than twice as great; and, in every case, the angular velocity of the *radius-vector* must be inversely proportional to the square of the mutual distance of the two bodies.

Progress of Discovery.—The true system of the universe was not understood till near the middle of the sixteenth century, when the illustrious Copernicus (born at Thorn, in Prussia, 1473) began the solution of the vast problem, by showing that the sun is the centre of our system; that the planets move around him in *circular* orbits; and that the daily motion of the heavenly bodies is only apparent, and caused by the rotation of the earth on its axis. Several phenomena, however, remained inexplicable under this theory, such as the change of planetary velocity in different parts of their orbits, and the consequent alteration of their apparent magnitudes,—appearances inconsistent with the assumption of their moving in perfectly circular orbits.

A century after Copernicus, the immortal Kepler appeared (born at Weil, in Würtemberg, in 1571), and devoted his life to the explication of these difficulties. The result was the three famous "laws" which will ever retain his name, and which may be ranked among the most brilliant discoveries ever made in science. They are as follow:—

1. The orbits of the planets are *ellipses*, which have all a common focus, and in this focus the sun is situated.

2. If a line be drawn connecting any planet with the centre of the sun, that line—called the *radius-vector*—will describe equal areas in equal times, in whatever part of the orbit the planet may be moving.

3. The squares of the times of revolution of any two planets are to each other in the same proportion as the cubes of their mean distances from the sun.

Finally, the world-renowned Newton (born at Woolsthorpe in Lincolnshire, in 1643) placed the keystone in the mighty arch erected by his predecessors, by discovering the law of universal gravitation, and thus completing the theoretic view of the planetary system.

The satellites of Jupiter were discovered by Galileo in the beginning of the seventeenth century; those of Saturn, by Huyghens and Cassini, in the latter half of that century; Urănus, by Herschel, in 1781; Neptune, by Adams and Leverrier simultaneously, in 1846; and all the planetoids during the present century. Every year, indeed, is adding new members to the system, as instruments are improved and the number of observers multiplied.

Astronomical Tables.—The following Tables—for which we are mainly indebted to the admirable "Series of Astronomical Tables" constructed for Professor Pillans' "Physical and Classical Geography"—give, in detail, all the most important of the numerous interesting facts which modern science has ascertained in regard to the different members of

THE SOLAR SYSTEM.

Names and Order of the Planets.	Distance from the Sun in Miles.*	Periodic Time of Revolution around the Sun, in mean Solar Days.	Velocity of orbitual Motion, per Hour, in Miles.	Rotation on Axis in Solar Days.	Amount of Light: the Earth = 1.	Number of Moons.
				Days. ho. m.		
Mercury	37,000,000	87.97	109,300	1 0 5	6.656	0
Venus	69,000,000	224.70	80,000	0 23 21	1.932	0
Earth	95,000,000	365.26	68,000	1 0 0	1.000	1
Mars	144,000,000	686.98	55,000	1 0 39	.436	0
Planetoids	263,000,000	1,684.74	40,900	unknown.	.130	0
Jupiter	494,000,000	4,332.62	29,800	0 9 56	.036	4
Saturn	906,000,000	10,759.30	22,000	0 10 29	.011	8
Urănus	1,822,000,000	30,686.82	15,500	0 9 30	.003	6
Neptune	2,869,000,000	60,624.63	12,400	unknown.	.001	1
Sun	... ...	... ...	17,583	25 0 0	...	...

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* Professor Bode, of Berlin, pointed out some years ago the following remarkable empirical law, relative to the distances of the planets from the sun and from

Names and Order of the Planets.	Diameter in English Miles.	Volume, the Earth being = 1.	Solid Contact in Millions of Cubic Miles.	Weight, the Earth being = 1.	Force of Gravity at Earth = 1.	Mean Specific Gravity of Material, the Earth = 1.	Inclination of Planet's Equator to Plane of Orbit.
							° ′ ″
Mercury	3,140	0.06	10,195	0.18	1.15	2.94	unknown.
Venus	7,700	0.96	223,521	0.90	0.91	0.92	75 0 0
Earth	7,916	1.00	260,775	1.00	1.00	1.00	23 27 35
Mars	4,100	0.14	48,723	0.15	0.50	0.95	30 18 11
Planetoids	undetermined.	inappreciable.	.. ..	unknown.	0.05	unknown	unknown.
Jupiter	90,000	1,414.20	343,125,820	333.61	2.45	0.24	3 5 30
Saturn	76,068	734.80	245,089,877	101.78	1.09	0.14	31 19 0
Urănus	34,500	82.00	19,727,774	19.93	1.05	0.24	90 0 0
Neptune	42,000	150.00	.. ..	31.79	1.20	0.23	unknown.
Sun	883,000	1,407,124.00	399,839,629,687	357,000.00	27.90	0.25	..
Moon	2,160	0.02	5,274	.0125	0.16	0.62	..

2. Relation of the Solar System to the Universe.—The Solar System, or the sun with his accompanying train of planets, satellites, and comets, constitutes but a small portion of the material universe. When we survey the heavens at night, we behold a multitude of luminous objects called stars; and, by the assistance of a good telescope, myriads more become visible. Their apparent magnitudes are very different, and this difference has been made the basis of classification in forming some estimate of their number. Those visible to the naked eye are divided into six classes: the brightest stars are said to be of the first magnitude; those of an inferior degree of brightness, of the second magnitude; and so on, down to the sixth, which comprises the smallest stars visible to the naked eye in the clearest moonless night. The telescope vastly extends the power of vision, and astronomers are familiar with stars of

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each other:—"The distance between the orbits of any two planets is nearly twice as great as that between the orbits of the next two nearer the sun." Thus suppose the distance of Mars from the Sun to be represented by 4; then, Venus will be 4+3, or 7 such distances; the Earth 4+twice 3, or 10 such distances; or more generally thus:—

Mercury, . . $4 =$ distances 4
Venus, . . $4+3 = 4+3 = 7$
Earth, . . $4+\overline{3\times2} = 4+6 = 10$
Mars, . . . $4+\overline{3\times2^2} = 4+12 = 16$
Planetoids, . . $4+\overline{3\times2^3} = 4+24 = 28$
Jupiter, . . $4+\overline{3\times2^4} = 4+48 = 52$
Saturn, . . . $4+\overline{3\times2^5} = 4+96 = 100$
Urănus, . . $4+\overline{3\times2^6} = 4+192 = 196$
Neptune, . . $4+\overline{3\times2^7} = 4+384 = 388$

the sixteenth degree of magnitude; and there is no reason to suppose that this is the limit to the progression, as every increase in the dimensions and power of the instrument brings into view myriads of stars that were invisible before.

Number of the Stars.—The total number of stars visible to the naked eye in the most favoured localities is about 5000. It is only at the equator, however, that so large a number can be seen; for there only the spectator has the opportunity of seeing the whole heavens, without altering his position. Should he take up his position at either of the poles, no more than half the starry firmament can ever pass in review before him; while at all intermediate positions, the number of stars visible in any one night will depend on the latitude of the place. Argelander of Bonn has classified the number of stars visible to the naked eye as follows:—

Stars of the first magnitude, . . .	20
second magnitude,	65
third magnitude,	190
fourth magnitude,	425
fifth magnitude,	1100
sixth magnitude,	3200
Total number visible at equator,	5000

It thus appears that each inferior class is about three times as numerous as the one preceding it. The whole number of stars already registered, down to the *seventh* magnitude, is about 15,000; and some eminent astronomers have estimated the total number of stars visible by means of the best telescopes, down to the sixteenth degree of magnitude, at 500,000,000,000! Prodigious as this number is, it will be indefinitely increased as the powers of the telescope are extended; and, for aught we know, the actual number of the stars may be infinite.

Distance of the Stars.—The distance of the fixed stars from the earth is as inconceivable as their number; but, until recently, there were no data from which any probable calculation could be made. In the year 1838, however, the parallax (or angle subtended by the diameter of the earth's orbit, as seen from a star) was measured in the case of three of them. The parallax of *α Centauri* was ascertained by Professor Henderson of Edinburgh to be 0″.9128, or nearly *one second*; that of 61 *Cygni*, by Professor Bessel of Königsberg, who found it to be 0″.3483; and that of *α Lyræ*, by Otto Struve, who found it to be about 0″.25, or a quarter of a second. The major diameter of the earth's orbit being about 195,000,000 of miles, a parallax of *one second* will give a distance of 20,000,000,000,000 (twenty billions) of miles, which is probably the distance from our sun of the nearest fixed star;—a distance so great that light, which travels at the rate of 192,000 miles per second, would require 3¼ years to traverse it. The distance of the star 61 *Cygni*, its parallax being only ⅓ of a second, will be *three times* this number; and of *a Lyræ*, whose parallax is ¼ of a second, will be *four times* twenty billions!

Magnitude of the Stars.—In the present state of astronomical science, the magnitude of even the nearest of the fixed stars cannot be given with any degree of accuracy. It is certain, however, that, in general, they are greatly larger than our sun; for were the sun to be removed from his present position, where he has an apparent diameter of 32′ 3″, and made to occupy the place of *α Centauri*, which is regarded as the nearest of the fixed stars, his diameter would be reduced to 0″.0093, or less than the hundredth part of a second. Here he would fail to be seen by the naked eye, and no telescope ever invented could give us any idea of his size. If, on the other hand, *α Centauri* were removed from his actual position, and made to occupy the place of our sun, it is calculated that the light which he emits would be 2⅓ times greater than that of the sun; and hence, it is argued, his *magnitude* must be correspondingly greater. The intrinsic splendour of Sirius is 63 times greater than that of *α Centauri*, and 147 times greater than that of the sun; and hence it is supposed the magnitude of Sirius is 147 times greater than that of our luminary. Considerable uncertainty, however, attaches to this mode of estimating the magnitude of those distant bodies. The light of the sun is so immensely superior in intensity to that of any star that it is impracticable to obtain any direct comparison between them, and it is only by using the moon as an intermediate term of comparison that any approximation to accuracy can be made. Wollaston, in 1829, found the proportion of the sun's light to that of the full moon to be as 801,072 to 1; while the light of the full moon exceeds that of *α Centauri* in the proportion of 27,408 to 1. Combining these results, he calculated the light of the sun as exceeding that of the star 21,955,000,000 times. Hence from the parallax above assigned to the star, it is easy to conclude that its intrinsic splendour is 2.3247 times that of the sun.

Proper Motion of the Sun and Stars.—The so-called "fixed stars" are, in reality, all in motion: and no fixed point—no object absolutely at rest, is to be met with in the whole universe. The power of gravitation, which binds together the numerous members of the solar system, appears to be equally operative among the most distant objects in space. The relative distances of the fixed stars, and even the configuration of the constellations, are imperceptibly altering. Of all the bright stars observed by the ancients, not one has kept its place unchanged. In the case of Arcturus, for example, of *μ Cassiopeiæ*, and of a double star in *Cygnus*, this change of position has, in 2000 years, amounted to 2½, 3½, and 6 moon's diameters, respectively. While some vary only the twentieth part of a second annually, others vary 7.7 seconds,—showing a ratio in their proper motions of 1:154. The Southern Cross will not always shine in the heavens in its present form, for the four stars of which it consists are moving in different directions. Even our own sun, so long regarded as stationary in the centre of the system, is found to be in rapid motion through space, and daily traversing a distance of

422,000 miles,—a space nearly equal to his own radius. Sir W. Herschel arrived at the conclusion, three quarters of a century ago, that he was moving in the direction of λ *Herculis*,—a point in right ascension 260° 34′, and north polar distance 63° 43′, for the year 1790. Otto Struve, from a very elaborate discussion of the proper motion of 392 stars, determined the point, for 1850, to be in right ascension 261° 52′; declination 37° 33′. It will probably, however, be a long time yet before astronomers are in a position to determine whether this motion of our system through space is in a right line or curvilinear; and, if the latter, what that point is around which it is revolving. Dr Mädler of Dorpat has, indeed, hazarded the conjecture that our sun is only one of the millions of stars of the well-known Milky-Way, which consists of a mighty ring, or wheel of stars, greatly crowded together at the circumference, but comparatively few towards the centre. The central group of this grand system, which composes our firmament, is, he thinks, the Pleiades, which revolves around *Alcyone*, the brightest orb of that beautiful constellation. The distance of our sun from that centre of force he calculates at 31,500,000 times the distance of the earth from the sun,—a distance so great that light could not traverse it in less than 500 years, and requiring 18,200,000 years for our sun to complete one revolution! But however lofty such conceptions of genius may be, they are not to be regarded as established scientific truths.

3. **Form, Size, and Motions of the Earth.**—Having thus traced the relation of the earth to surrounding worlds, we now return to examine itself more minutely. Its *form* is that which a perfect sphere * of semi-fluid consistency would assume, were it made to revolve around its axis with the same rapidity as the earth does. Such a form is called an *oblate-spheroid*,†—that is, a sphere somewhat flattened or compressed at the poles, like an orange. The larger or equatorial diameter exceeds the polar diameter by 26 miles—the former being 7924, and the latter 7898 miles. In round numbers, the diameter may be stated at 8000

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* Among the numerous proofs of the spherical form of the earth, the following may be mentioned:—

1. A much greater extent of the earth's surface is visible from the top of a mountain than from a plain near the level of the sea.
2. As the mariner nears the land, he first sees the tops of the mountains; and on approaching nearer, the lower grounds become visible.
3. In cutting for a canal, it is found that allowance must be made for a dip of about 8 inches per mile, in order to keep the water at a uniform level.
4. In travelling to any considerable distance, either north or south, new stars come to view in the direction in which the traveller is advancing, while others disappear in the direction from which he is receding.
5. Many navigators, who have sailed constantly in one direction, whether due east or due west, have returned to the port from which they set out.
6. The shadow which the earth casts on the moon, during an eclipse, is always circular.
7. All the other members of the solar system are spherical.

† A *prolate* spheroid, on the contrary, is a sphere somewhat elongated in the direction of its poles, forming a body shaped like a lemon.

miles; the radius, or semi-diameter, at 4000; the circumference at 25,000; the area, or superficial content, at 197,000,000 square miles; and the volume, or solid content, at 260,775,000,000 cubic miles.*

Motions of the Earth.—The earth has three motions: first, that referred to above, in accompanying the sun through space (*see* p. 2); second, an *annual* or *orbitual* motion round the sun,† which it performs in 365.26 mean solar days; and the third, called its *diurnal* motion, round its own axis, in 1 day, or 24 solar hours.‡ The *axis* is an imaginary line passing through the earth's centre, and inclined to the plane of its orbit at an angle of 23° 27′ 56.5″. This imaginary line remains always parallel to itself; or, what is the same thing, its extremities, which are called its *poles*, always point to the same fixed stars, and present themselves alternately to the sun,—thus giving rise to the variety of the *seasons*, as the diurnal motion, which is from west to east, causes the alternations of *day* and *night*, and of the rising, southing, and setting of the heavenly bodies. If the axis on which the earth performs her daily rotation were exactly perpendicular to the plane of her path round the sun, one constant climate would characterise the same parallel of latitude at all times of the year, and all the benefits which result to mankind from the regular succession of the seasons would have been wanting; but by the simple arrangement of the axis being inclined 23½° from the perpendicular, the All-Wise Creator has made perpetual provision for the regular recurrence of summer and winter, of seed-time and harvest.§

4. MATHEMATICAL DIVISIONS OF THE EARTH.—In order to describe with precision the position of places on the earth's surface, and the effects that result from its orbitual and diurnal

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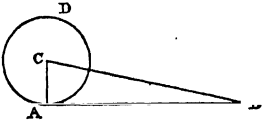
* Tyros in mathematics may be reminded of the following facts:—

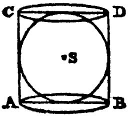
1. The circumference of a circle, or sphere, whose diameter is 1, is = 3.1416, or $3\frac{1}{7}$ nearly. Hence, to find the circumference of any other circle, or sphere, multiply its diameter by $3\frac{1}{7}$.

2. The area of a circle is found by multiplying its radius by half its circumference. Thus the area of the circle A D is equal to the area of the triangle A B C, the base of which, A B, is = the circumference of the circle. More briefly, $A = \frac{B \times C}{2}$



3. The area of a sphere is equal to the *convex area of the circumscribing cylinder;* and its solid content is equal to ⅔ of the solid content of the circumscribing cylinder. Or, Area $= D^2 \times 3.1416$.

$$\text{Solid content} = \frac{\text{rad.} \times \text{area}}{3}$$



† Strictly speaking, not around the sun, but around the common centre of gravity of the sun and earth, which is a point 267 miles from the sun's centre.

‡ But a *sidereal* day, or one measured by the stars, consists of 23 h. 56 m. 4 s. of solar time.

§ For beautiful illustrations of the seasons, and of the changes of day and night, see A. K. JOHNSTON'S *School Atlas of Astronomy*, Plate XI.

motions, certain imaginary lines are drawn round it, which are called *great circles* when they divide it into two equal hemispheres, and *small circles* when they divide it unequally.

The Great Circles are the Equator, Horizon, Meridians, Ecliptic, and the two Colures.

The *Equator*, a large circle, equidistant from the poles, divides the earth into a Northern and a Southern Hemisphere. The latitude of places is measured *from* it, north and south; and their longitude, *on* it, east and west.

The *Horizon* separates the visible half of the celestial concave from the half that is invisible, and is either rational or sensible. The rational, or true horizon, by which the rising and setting of all the heavenly bodies are determined, is an imaginary plane passing through the centre of the earth, and prolonged in imagination till it attains the region of the stars. Parallel to it, and coextensive with it, is the sensible horizon, whose plane is a tangent to the surface at the point on which the spectator is placed. These two planes, although separated throughout their whole extent by a semi-diameter of the earth, will yet, on account of the vast distance at which that interval is seen, be confounded together, and appear as one line in the heavens.

As applied to the earth, however, the sensible or apparent horizon is the small circle which terminates our view of the surface, where earth and sky appear to meet. It enlarges or contracts, according as the spectator's eye is elevated or depressed: thus, if the eye be elevated 6 feet above the sea, the circular expanse of water visible to it will be 3 miles in diameter. The *Cardinal Points* of the horizon are north, south, east, and west; the *Zenith* is the upper pole of our horizon, and the *Nadir* the lower pole.

The *Meridians*, or lines of longitude, are great circles passing through the poles, and cutting the equator at right angles. Each of them divides the earth into two hemispheres which, in respect to each other, may be termed east and west. There are 12 meridians commonly drawn on globes, each 15° apart, equal to a difference in time of one hour; and 18 meridians, on maps of the world, each 10° apart, corresponding to a difference in time of 40 minutes. But every place is supposed to have a meridian passing through it; and when the sun comes to that meridian, it is noon or mid-day at that place. The *longitude* of a place is its distance east or west from the *first meridian*, or that one from which we agree to count. This has varied with different nations, for nature supplies no particular spot from which longitude should be counted in preference to all others. Thus the French reckon from the meridian of Paris; the Spaniards, from that of Cadiz; and the English, from the Royal Observatory at Greenwich. When the latitude and longitude of a place are known, its exact position on the globe may at once be pointed out. The value of a degree of longitude varies according to the latitude, and is nowhere equal to a degree of latitude, except on the equator. At 60° lat. a degree of longitude is equal to 30 geographical miles, or just the half of its length on the equator; while at the poles it vanishes to nothing.

TABLE SHOWING THE LENGTH OF A DEGREE OF LONGITUDE FOR EVERY 5 DEGREES OF LATITUDE IN GEOGRAPHICAL AND ENGLISH MILES.

Deg. of Latitude.	Geog. Miles.	Eng. Miles.	Deg. of Latitude.	Geog. Miles.	Eng. Miles.
0	60.00	69.07	50	38.57	44.35
5	59.77	68.81	55	34.41	39.58
10	59.09	67.95	60	30.00	34.50
15	57.95	66.65	65	25.36	29.15
20	56.38	64.84	70	20.52	23.60
25	54.38	62.53	75	15.53	17.86
30	51.96	59.75	80	10.42	11.98
35	49.15	56.51	85	5.23	6.00
40	45.96	52.85	90	0.00	0.00
45	42.43	48.78			

The *Ecliptic* is a great circle, which represents the sun's apparent annual track among the fixed stars. It derives its name from being the circle on or near which the moon must be in the case of an *eclipse*. Its plane makes an angle of 23½° with the plane of the equator. The sun is in the north, or highest point of the Ecliptic, on 21st June; and he is then vertical at the tropic of Cancer; he is in the south, or lowest point, on 21st December, and is then vertical at the tropic of Capricorn. The Ecliptic is divided into twelve equal parts, called *signs*, of 30° each, named from the constellations or groups of stars through which the sun appears successively to pass. These, with the days on which the sun enters them, are as follows:—

Aries, March 21.
Taurus, April 19.
Gemini, May 20.

Cancer, June 21.
Leo, July 22. } *Summer.*
Virgo, Aug. 22.

Libra, Sep. 23.
Scorpio, Oct. 23. } *Autumn.*
Sagittarius, Nov. 22.

Capricornus, Dec. 21.
Aquarius, Jan. 20. } *Winter.*
Pisces, Feb. 19.

The *Colures* are two meridians which divide the Ecliptic into four equal parts, marking the four Seasons of the year. One of them intersects the equinoctial points, Aries and Libra, and is thence called the Equinoctial Colure; the other intersects the solstitial points, Cancer and Capricorn, and is called the Solstitial Colure.

The Small Circles are the Tropics, the Parallels of Latitude, and the Polar Circles.

The *Tropics* are two small circles parallel to the equator, and at the distance of 23½°, north and south. They are so named because the sun, arrived at them in his apparent annual course, seems to *turn away*, either northward or southward, as the case may be. The northern is called the Tropic of Cancer, and the southern the Tropic of Capricorn, because they coincide with the ecliptic in the beginning of those signs.

The *Parallels of Latitude* are small circles parallel to the equator, the object of which is to indicate the latitude of places, and to connect together all places on the globe having the same latitude. Though on globes and maps of the world they are usually drawn at intervals of 10°, every place is supposed to have a parallel of latitude passing through it.

The *Polar Circles* are two small circles, drawn around the North and South Pole respectively—the former being called the Arctic, and the latter the Antarctic Circle. Their distance from the Poles is 23½°, that being the angle formed by the earth's axis and a line drawn perpendicular to the earth's orbit. When the sun is vertical to places situated on the Tropic of Cancer, his rays extend beyond the Pole to the Arctic Circle, and all countries within the Antarctic Circle are then in darkness.

Zones.—The Tropics and Polar Circles divide the surface of the earth into five great Climatal Zones or Belts—viz.

1. One *Torrid Zone*, 47° in breadth, or 23½° on either side of the equator, and bounded by the Tropics of Cancer and Capricorn. Every place in this wide region has the sun vertical to it twice a-year; and as the sun's rays never fall very obliquely on any part of it, the temperature at the surface of the earth is here always very high.

2. Two *Temperate Zones*, one northern and the other southern, each 43° in breadth, lying between the Tropics and the Polar Circles. Never having the sun vertical, they are characterised by a lower temperature than tropical regions; the fruits of the earth are less luxuriant and spontaneous; and man, compelled to exercise his corporeal and thinking powers, attains to a higher degree of intelligence and civilisation than in those regions where his wants are supplied without any exertion on his part.

3. The Two *Frigid Zones*, each 23½° in radius, are included within the Polar Circles. They are deprived of the influence of the sun for long intervals in winter, and have a correspondingly greater length of day in summer, when his rays fall very obliquely on the surface. These conditions, coupled with the extreme cold of the long winters, are so unfavourable to human culture and human happiness, that the tribes who inhabit the frigid zone have not been able to attain to any considerable degree of civilisation.

PART II.

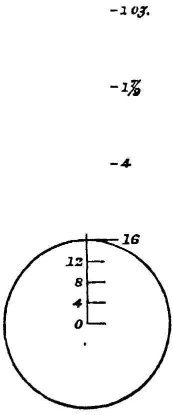
PHYSICAL GEOGRAPHY.

1.—Materials, Density, and Attractive Power of the Earth.—Of the interior of the planet which we inhabit we know almost nothing, our observation being confined to a portion of its external crust, or rind, rarely exceeding 10 miles in depth, or $\frac{1}{400}$ of the distance from the surface to the centre. Small as this portion is, when compared with the immense volume enclosed by it, it presents to our view a vast variety of substances, each of which has a character peculiar to itself. On examination, they are nearly all found to be *compound bodies*, which, on being analysed, are reducible to sixty-two *constituent elements.*

These the chemist divides into two groups,—the *Metallic*, and the *Non-metallic.* The metals are fifty in number, the best known of them being gold, silver, copper, iron, lead, tin, zinc, and mercury; while the non-metallic class consists of only twelve, the principal of which are oxygen, hydrogen, nitrogen, carbon, sulphur, and phosphorus. Each of these elementary substances has properties peculiar to itself; and, what is more remarkable, on each of them the Creator has stamped, in deep and indelible characters, a *particular number*, which forms, as it were, the law of its being, and determines in what proportions it shall combine with other substances. This *law of definite proportions* serves in the mineral kingdom the same end as the laws which regulate the propagation of species do in the vegetable and animal kingdoms; the identity of species is rigidly preserved, and, notwithstanding the prodigious number of combinations, all confusion is avoided. The fundamental laws which regulate all chemical combinations are four in number: 1. All chemical compounds are definite in their nature, the ratio of the elements being constant. 2. When any body is capable of uniting with a second in several proportions, these proportions bear a simple relation to each other. 3. If a body, A, unite with other bodies, B, C, D, the quantities of B, C, D, which unite with A, represent the *relations in which they unite among themselves*, in the event of union taking place. 4. The combining quantity of a compound is the sum of the combining quantities of its components.

Each of the sixty-two elementary substances has a *density* or specific gravity peculiar to itself, ranging from hydrogen, which is the lightest, to platinum, which is the heaviest; but the resulting mean density of the Earth is 5.67, or about five and two-thirds the weight of its own bulk of distilled water at the temperature of 60°. Thus, while the specific gravity of Mercury is nearly thrice as great, that of the Sun, Jupiter, Urănus, and Neptune, is four times less. As the specific gravity of the substances forming the crust of the Earth rarely exceeds 3.0, the obvious inference seems to be, that the interior of the planet cannot be hollow, but, on the contrary, must consist of materials in a highly condensed state.

The **Attractive Energy** which the Earth exercises on all material substances near its surface is such that, when freely suspended, they are drawn towards it with a velocity of 16 feet in the first second of time; *three* times 16 feet the next second; *five* times 16 feet the third second; and so on, following the order of the odd numbers of the scale. Comparing the Earth, in this particular, with the other planets, we find that bodies falling towards the surface of Mars descend with only the half of this velocity; while in Jupiter the velocity is nearly three times greater. At great elevations above the surface the intensity of the force of gravitation decreases in the *inverse ratio of the square of the distance.* Thus, a body which (in a spring balance) weighs 16 ounces at the surface, will weigh only 4 ounces at the distance of two semi-diameters from the centre, or one semi-diameter above the surface; while at the distance of four semi-diameters it will weigh only 1 ounce. *Under* the surface the law of decrease is very different, it being there *directly as the distance* from the centre. Thus, at one thousand miles below the surface the body will weigh 12 ounces; half-way towards the centre, 8 ounces; at the distance of a thousand miles from the centre, 4 ounces; while at the centre the pressure on the balance will be nothing. The accompanying Diagram will render these observations more intelligible to the pupil.



2. Configuration of the Surface.

Division into Land and Water.—The surface of the earth, which, as we have already seen, comprises an area of 197,000,000 square miles, is very unequally divided into land and water. The total area of the land is estimated at 51,500,000 sq. m., or a little more than ¼ of the entire surface; while the waters cover 145,500,000 sq. m., or nearly ¾ of the whole. The land is, moreover, very unequally distributed over the surface: thus, the northern hemisphere contains three times as much land as the southern; the eastern hemisphere, or Old World, contains twice as much as the western; and if a great circle be drawn round the globe, having London as its centre, it will divide the surface in such a way as that nearly all the land will be in one hemisphere—which may therefore be called the *continental hemisphere;* while the other, or that which has Antipodes Island, near New Zealand, as its centre, will be nearly all water, and may therefore be called the *oceanic hemisphere*—only that it contains Australia and a portion of South America.

If we regard the earth as divided into zones instead of hemispheres, we find that the North Temperate Zone, or that in which the continent of Europe is situated, is the one which contains the greatest proportion of land.

Continents.—The land surface of the globe is further broken up into huge distinct masses, called continents, which are six in number—viz. Europe, Asia, Africa, North America, South America, and Australia. These, however, are not wholly detached from each other, but collected into groups, the members of which are generally united by isthmuses. Properly speaking, there are only three continents—viz. *First*, the Old World, containing Europe, Asia, and Africa; *second*, the New World, embracing North and South America; and *third*, the Australian continent—the only important mass of land in the oceanic hemisphere, with the exception of the recently discovered countries within the Antarctic Circle (*see p.* 25).

Of these grand continents the eastern, or Old World, is by far the largest and most important, having an area of 32,000,000 sq. m., a maritime coast-line of 60,000 m., and a pop. of 978,000,000. The area of the western continent, or New World, is 15,840,000 sq. m., being almost exactly the half of the former; its pop. 58,000,000, or $\frac{1}{17}$ of the Old World; while its coast-line is only 32,000, m. or but little more than $\frac{1}{2}$ of the Old World. Australia has an area estimated at 3,038,000 sq. m., being $\frac{1}{5}$ of the western continent, and a population of 919,900, or $\frac{1}{63}$ of America.

Contour and Elevation.—The following are some of the comparisons, equally interesting and curious, that have been drawn by Carl Ritter and other geographers between the two great continents in respect to their forms of *contour* and *relief:*—

1. The greatest length of the Old World is from east to west, while that of the New is from north to south; in other words, the eastern continent has its greatest extension in the direction of the *parallels*, while the western has its greatest extension in the direction of the *meridians.*

2. The greatest extension of both continents towards the north and south is nearly under the same meridians. Thus, the Cape of Good Hope is nearly in the same meridian with Cape Nordkyn in Norway; the peninsula of Malacca with Cape Severo in Siberia; and Cape Horn with the north-west angle of Greenland. The last-mentioned country, however, is now known to be detached from the North American continent.

3. Both continents attain their greatest extension from west to east along the same parallel—viz. that of 50° N.

4. Both continents spread out widely towards the north, where they closely approach each other; both are abruptly terminated by

the Arctic Ocean in nearly the same latitude—viz. that of 72°; whereas toward the south they widely diverge, and narrow down to single promontories.

5. In either continent a large portion of the area is nearly detached from its principal mass: thus Africa is nearly severed from the one continent and South America from the other.

6. All the great peninsulas of both continents follow a southerly direction; as the Scandinavian, Spanish, Italian, Hellenic peninsulas, Africa, Arabia, Hindostan, Further India, Corea, and Kamtschatka, in the one; and Aliaska, California, South America, Florida, and Nova Scotia, in the other. The only important exceptions to this generalisation are, Jutland in the Old World and Yucatan in the New, both of which stretch *northward;* and Asia Minor in the former and Russian America in the latter, which project towards the *west.*

7. The opposite coasts of the two grand continents are strikingly conformable to each other, the projections of the one being opposite to the indentations of the other, as if they meditated a closer union at some future time: thus Brazil stands opposite to the Gulf of Guinea; Western Africa to the Gulf of Mexico; Nova Scotia to the Bay of Biscay; while the opposite coasts of Greenland and Norway are nearly parallel.

8. Looking at the two continents in another way, we find that Africa with Madagascar has its counterpart in South America with the Falkland Isles; while Florida and the West Indies have a similar correspondence with Malacca and the East Indian Archipelago.

9. Taking the six separate continents, it is a remarkable fact that, with the exception of Africa, they all present to the ocean on their northern sides broad flats of low-lying land; while their southern extremities are rocky, pointed, and elevated. Again, while Africa, South America, and, we may almost add, North America, contract toward the south into single promontories, each of the others sends out three separate projections, which curiously correspond, each to each. Thus the Spanish peninsula resembles Arabia; Italy with Sicily corresponds to India with Ceylon; and the Hellenic peninsula with its adjacent islands, to Further India with the Malay archi-

10. But the most important feature of configuration is that which has reference to their comparative lengths of *coast-line.* While the three southern continents present to the ocean an almost unbroken front, neither receiving its waters into their bosoms nor projecting into it any important peninsulas, the three northern ones are highly indented, though in very different degrees, their masses evincing a tendency to break up into members. Thus, while Asia and North America has each an extensive line of coast, Europe has wholly surrendered herself to the ocean, as if conscious that at a future time that element would become one of the chief sources of her prosperity.

In regard to the lines of **Vertical Relief**, on the other hand, the following are the most important generalisations:—

1. All the continents rise gradually from the sea-shore towards the interior, where they attain their maximum elevation; and thus each of them presents to the surrounding ocean two great slopes, which greatly differ, however, in length and degree of inclination.

2. In the Old World, the long gentle slope is inclined toward the north, and the short abrupt slope toward the south; while in the New World the gentle slope is toward the east, and the abrupt toward the west.

3. But while each of the grand continents has thus a law peculiar to itself, it is also influenced by the law of the other. Thus, though in the Old World the long or gentle slope is toward the north, and the short or abrupt one toward the south, it is also true that the slope fronting the east is more gradual than that fronting the west. In like manner, though in the New World the longer slope fronts the east, and the shorter the west, it is also true that the slope which fronts the north is gentler than that which fronts the south.

4. The laws regulating the primary and secondary slopes, however, may be expressed still more generally thus: In both continents the long and gentle slopes descend toward the Atlantic, or toward the Arctic Ocean which is its continuation; while the short and abrupt slopes incline to the Pacific, or to the Indian Ocean which may be regarded as one of its members.

5. The elevated ridge formed by the intersection of the great slopes is usually occupied by lofty mountain-chains, and constitutes the grand *watersheds* of the different continents. Hence in the Old World the general direction of the principal mountain-ranges is from east to west, while in the New it is from north to south. In the one they proceed in the direction of the parallels; in the other in that of the meridians; while in both they extend in the direction of the *greatest length* of the continents. Thus, in the eastern continent one immense mountain-chain extends, with few interruptions, from the western extremity of the Pyrenees to the vicinity of Behring Strait; while in the western, an almost unbroken range extends from the north-east angle of Russian America to the southern extremity of Patagonia.

6. The law of following the direction of the greatest length holds equally true in regard to all the more important peninsulas and islands. Thus Scandinavia, Italy, Malacca, Corea, Kamtschatka, and Lower California, together with Great Britain, Corsica, Sardinia, Sicily, Crete, Madagascar, Sumatra, Java, Japan, Cuba, Hayti, Jamaica, and New Zealand, are all traversed by mountain-ranges in the direction of their greatest length.

7. While in both hemispheres the reliefs go on increasing from the poles to the equator, the highest elevations of the Eastern Hemisphere occur in the vicinity of the Tropic of Cancer, while in the Western they are found near the Tropic of Capricorn: compare the positions of Mount Everest, Kunchinginga, and Dhawalagiri, in the Himalaya, with those of Aconcagua and Sahama, in the Andes of Chile and Bolivia.

8. A remarkable similarity exists between Europe and Asia in

respect to their reliefs, and an equally striking dissimilarity between Africa and South America. Thus the Pyrenees and Alps correspond with the Taurus, Caucasus, and Himalayan ranges; the basin of the lower Danube has its counterpart in Tonquin; European Turkey corresponds with Further India; Venetian Lombardy with the basin of the Ganges; while Delhi, Calcutta, and Bombay at once suggest Milan, Venice, and Genoa. But while the interior of Africa is chiefly occupied with dreary deserts and elevated plateaux, and has its loftiest elevations on the east side, the interior of South America is low and fertile, with a huge mountain-range on the west side: yet the Nile and the Zambezé correspond in direction, magnitude, and importance, with the Amazon and La Plata.

9. While the *Table-lands* in both hemispheres are intimately connected with the mountain-ranges,—the highest mountains invariably rising, not from plains, but from elevated plateaux,—the Old World is most remarkable for its *Mountains and Table-lands*, and the New for its *Plains and Rivers*.

The principal TABLE-LANDS in the Eastern Hemisphere are those of Spain, Bavaria, Auvergne; Asia Minor, Armenia, Arabia, Iran, the Deccan, and Central Asia; the Sahara, Abyssinia, and Southern Africa. In the Western Hemisphere, a series of lofty table-lands forms a broad irregular belt along the coast of the Pacific, from Behring Strait to the Caribbean Sea, and from the latter to the Strait of Magellan.

The principal PLAINS of the Old World are: 1. The *Great Northern Plain*, which, extending, with but one important interruption, from the shores of the Atlantic to the vicinity of Behring Strait, and from the Arctic Ocean to the table-land of Iran, comprises about a half of the area of Europe and Asia united, and is so uniformly level that the entire space may be traversed without changing the level more than a few hundred feet. It consists of three principal members—viz. the Sarmatian Plain, the Siberian Plain, and the Kirghiz Steppes. 2. *The Plain of Hindostan*, between the Himalaya and the Deccan, and including the valleys of the Indus and Ganges. 3. The *Chinese Plain*, or the lower basins of the Hoang-Ho and Yang-tse-Kiang. The Plains of the New World occupy a still larger portion of the entire area; the principal are: 1. The *Great Central Plain* of North America, extending from the Arctic Ocean to the Gulf of Mexico, and from the Alleghanies to the Rocky Mountains; it is watered by many great rivers, embraces the largest fresh-water lakes on the globe, and is traversed from east to west by a broad, gentle swell of land, which divides the waters that flow to the Arctic Ocean from those that enter the Gulf of Mexico. 2. The *Atlantic Plain*, between the Alleghanies and the Atlantic Ocean. 3. The immense basins of the Orinoco, Amazon, and Rio de la Plata, called respectively *llanos*, *selvas*, and *pampas*; the first of which is one of the most level portions of the earth's surface, being only 192 feet high at a distance of 450 miles from the ocean; the second is the largest river-basin in the world, having an area of 1,500,000 square miles; while the third embraces the minor basins of the Parana, Paraguay, and Colorado, together with the *Pampas* of Buenos Ayres, with a united area of 886,000 square miles.

10. Notwithstanding the imposing height of the various mountain-chains, the mean elevation of the continents depends far less on it

than on the general configuration and extent of the plains and table-lands. This is evident from the fact that the highest elevation of the loftiest mountain-range on the globe does not exceed 5½ miles above the level of the sea, being little more than the $\frac{1}{1400}$ part of the earth's diameter. Consequently the mountain-chains on the globe produce no greater deviation from its spherical shape than the small protuberances on the rind of an orange do on its general form. For example, if the entire mass of the Alps were pulverised and distributed over the whole extent of Europe, its surface would not thereby be raised more than 22 feet above its present level; while, on the contrary, were the great plateau of Spain, which has an elevation of only 2000 feet, levelled down and spread in a similar manner over the continent, the general surface would be raised 76 feet. The Himalaya and Kuen-lun Mountains, with the table-land of Tibet by which they are connected, would produce an elevating effect on the whole of Asia amounting to 358 feet; and it is estimated that if all the inequalities on the earth's surface were reduced to an uniform natural level, the entire land would have an elevation above the sea of about 1000 feet. Or taking each of the continents separately, the average elevation of Europe would be 671 feet, of North America 748 feet, of South America 1132 feet, and of Asia 1151 feet.

11. It was long a prevalent opinion, founded on theoretical views, that the depths of the ocean must be nearly equal to the elevations of the continents; but the greatest depths hitherto ascertained by the improved methods of sounding are in the North Atlantic Ocean, and do not exceed 25,000 feet; while Mount Everest, in the Himalaya, standing midway between Kunchinginga and Dhawalagiri, raises its snowy summit to an elevation of 29,000 feet. Thus, from the greatest depth yet reached by the plummet to the highest known mountain-summit, is upwards of ten miles in a vertical line, or $\frac{1}{400}$ of the earth's radius.

3. THE OCEAN.—About 145,500,000 square miles, or nearly three-fourths of the entire superficies of the globe, are permanently covered with water, the surface of which forms a true *natural level.* Such a level, in the case of a rotating body like the earth, the materials of which are capable of yielding to the influences of gravity and of the other forces that act upon it, is of a spheroidal form, like that of an orange, and differs materially from a dead, horizontal level, such as the floor of an apartment. The surface of lakes, deserts, plains, and even of the continents, conforms itself to this natural level; it forms the limit from which all the elevations of the land and the soundings of the ocean are measured; and, in constructing a canal or a railway along the surface, an allowance must always be made for this difference, amounting to about 8 inches in the mile. Instead of being separated from each other by natural barriers, like the continents, all the great waters of the globe are continuous and united; and hence, though there are three great continents,

there is strictly speaking but one ocean. On inspecting an artificial globe, however, it will be seen that the three great continents are so arranged as, in a great measure, to separate from the main body of the waters three corresponding oceans. Thus, setting out from Europe, and pursuing a westerly course, the Atlantic is seen to separate the Old World from the New; the Pacific to separate the latter from Asia and Australia; and the Indian Ocean, Australia from Africa. It is more usual and convenient, however, to divide the waters into *five* distinct oceans, which is effected by supposing the oceans above-named to be bounded at their extremities by the Arctic and Antarctic Circles; while the waters around the Poles, and embraced within those circles, are respectively denominated the Arctic and Antarctic Ocean. As Europe and Asia form, in fact, but one continent, we have thus *five continents* more or less detached from each other, and *five oceans* more or less connected.

The **Atlantic Ocean** deserves the first place, for though only half the size of the Pacific, it is the best-known to Europeans; and of all the great waters of the globe it has always been the most important, as that on whose shores and gulfs the greater number of the civilised nations of the earth have taken up their abode. It occupies a huge, angular, canal-shaped basin, whose sides are nearly parallel to each other—the projections of the one side standing opposite to the indentations of the other; extends from N. to S. about 9000 miles; separates the Old World, on the east side, from the New on the west; and connects the Arctic with the Antarctic Ocean. It varies greatly in breadth in different parts, being 4100 miles between the shores of Marocco and the Isthmus of Florida; 1700 miles between Brazil and Sierra Leone; and 900 miles between Greenland and the coast of Norway. The *area* is estimated at 25,000,000 square miles, or nearly half the area of the entire land. It is distinguished from all the other oceans by the great depth of its waters; by the fewness of its islands; and by the great number of seas and gulfs which it projects into the continents that confine its waters. It varies greatly in *depth*, from 300 fathoms near the shores to about 4 miles towards the centre—the greatest depth hitherto ascertained by the improved methods of deep-sea sounding being that obtained by Lieutenant Maury, near the southern limit of the Great Bank of Newfoundland, where it was found to be 25,000 feet. The average depth of the Gulf of Mexico is 1 mile; the greatest depth of the Caribbean Sea, 3 miles; of the S. Atlantic, 3 miles; and of the N. Atlantic, 4 miles.

A remarkable steppe, or raised bottom, occurs between Ireland and Newfoundland, which is now known as the Telegraphic Plateau, being that on which rests the great submarine telegraphic cable which unites Europe with America, and which was completed 5th August 1858.

The principal *Branches* of the Atlantic are the Baltic, the North Sea, the Irish Sea, the English Channel, the Bay of Biscay, the Mediterranean, and the Gulf of Guinea, on the east side; and Hudson Bay, Gulf of St Lawrence, Gulf of Mexico, and the Caribbean Sea, on the west. The principal *Islands and Archipelagos* are, Iceland, the British Isles, Azores, Madeira, Canary and Cape Verd Isles, near its eastern shores; and Newfoundland, Cape Breton, Bermudas, Bahamas, Antilles, and the Falkland Isles, near its western. Its chief *Affluents* from the Old World are the Neva, Rhine, Loire, Tagus, Rhone, Po, Danube, and Don; Nile, Senegal, Niger, Congo, and Orange; and from the New World, the St Lawrence, Mississippi, and Rio Grande del Norte; the Orinoco, Amazon, and Rio de la Plata.

The *Trade Winds* blow regularly in its intertropical portion (*see* p. 30); but beyond these limits the winds are variable. Among its principal *Currents* are, the Equatorial Current, which flows from the coast of South Africa to the Caribbean Sea, with a velocity of from 30 to 70 miles a-day, and a temperature of 75°; and the far more celebrated Gulf Stream, which, leaving the Gulf of Mexico, flows through the Strait of Florida with a velocity of 80 miles a-day, and a temperature of 86° Fahr. "After having run 3000 miles towards the north, it still preserves, even in winter, the heat of summer. With this temperature it crosses the 40th degree of north latitude, and there overflowing its liquid banks, it spreads itself out for thousands of square leagues over the cold waters around, and covers the ocean with a mantle of warmth that serves so much to mitigate in Europe the rigours of winter. Moving now more slowly, but dispensing its genial influences more freely, it finally meets the British Islands. By these it is divided, one part going into the Polar basin of Spitzbergen, the other entering the Bay of Biscay, but each with a warmth considerably above the ocean temperature. Such an immense volume of heated water cannot fail to carry with it beyond the seas a mild and moist atmosphere; and this it is which so much softens climate there."

Thus we see that the waters of the Atlantic between the equator and the 40th parallel are kept in a perpetual whirlpool, the circumference of which cannot be less than from eleven to twelve thousand miles; and Humboldt calculates that a particle of water requires two years and ten months to complete one revolution. In the centre of this revolving current there is a mass of nearly stagnant water, covered by dense masses of an evergreen sea-weed, called *Fucus natans*, which made so lively an impression on the mind of Columbus and his crew when about to discover America in 1492.

The **Pacific Ocean** separates America on the east from Asia, Malaysia, and Australia on the west; and is by far the grandest expanse of water on the globe, having an area estimated at 50,000,000 of square miles, or nearly equal to the whole land-surface of the globe. Unlike the Atlantic, of which it is double the size, its greatest length is from E. to W. along the equator—a direction in which it extends 175°, or upwards of 12,000 miles, reckoning from the coast of Peru to the Malay peninsula. Its greatest breadth, between Behring Strait and the Antarctic Circle, is 9000 miles, corresponding with the extreme length of the Atlantic. Its shape is somewhat oval, being widest in the middle and contracting towards both extremities, especially in the north, where the opposite shores are only 36 miles apart. The coast line, on the American side, though bold, is very little indented by the ocean, the principal *Inlets* and *Branches* being, Behring Sea, or the Sea of Kamtschatka, the Gulf of California, and Bay of Panama; while of those on its western side the chief are, the Sea of Okhotsk, Sea of Japan, Yellow Sea, China Sea, and Gulf of Siam, with the Gulf of Carpentaria in Australia. This ocean is especially characterised by the immense number of *Archipelagos*—many of which are of volcanic, and others of submarine coral formation—that are scattered over its surface, especially in its western and central parts. North of the Tropic of Cancer the principal groups are, the Japan Isles, Kurile Isles, Aleutian Isles, Queen Charlotte's Island, and Vancouver Island. South of the Tropic of Cancer, and proceeding from W. to E., we find Malaysia, or the Malay Archipelago, the Ladrones, Caroline Isles, Marshall Archipelago, Sandwich Isles, and the Galapagos Islands near the South American coast. Then returning westward, we come to the Marquesas, Low Archipelago, Society Islands, Hervey or Cook's Islands, Navigators' Islands, Friendly Islands, Feejee Islands, Queen Charlotte's Islands, Saloman Isles, New Hebrides, New Caledonia, and New Zealand. Its chief *Affluents* from the Old World are, the Amour, Hoang-Ho, Yang-tse-Kiang, Cambodia, Meinam; and from the New World, the Frarer, Columbia, and Colorado. The principal *Current* of this ocean is called the Equatorial Current, which, originating in the Antarctic Drift Current, flows N. along the western shores of South America to the coast of Peru, and then W. through the Pacific, where it occupies the entire space between the tropics, producing a genial coolness where otherwise the heat would be almost insupportable. Opposite Lima, on the Peruvian coast, its temperature is 14° below that of the neighbouring ocean; and even at Payta, which is 7 degrees farther N., it is 10° colder than the sea in its vicinity. Farther W. it gradually looses its cooling powers, which however are perceptible to the vicinity of the Marquesas.

The Pacific Ocean was unknown to Europeans till the year 1513, when it was discovered by *Vasco Nunez de Bilbao*, from the summit of a mountain near the Isthmus of Panama. *Magalhaen*, who sailed from America to the Philippine Islands, in 1521, bestowed on it the name of Pacific, in consequence of the calm and delightful weather he experienced while navigating its surface.

The **Indian Ocean** separates Malaysia, Australia, and Tasmania, on the east, from Arabia and Africa on the west; its northern boundary is formed by the shores of India and Beloochistan, and its southern, by the Antarctic Circle. Its shape would have approximated to an equilateral triangle, had not Asia projected its hugest peninsula into its apex, and given it a very irregular form. Extending from a little beyond the Tropic of Cancer to the Antarctic Circle, its greatest length is 90°, or about 6000 miles; while its extreme breadth, from Cape Agulhas to Tasmania, is expressed by the same number. The area is generally estimated at 20,000,000 square miles, or 18,000,000 when its southern boundary is formed by a line connecting South Cape in Tasmania with Cape Agulhas in Africa. In proportion to its magnitude, it equals even the Atlantic as to the number and extent of the branches which it sends into the land, especially on its northern frontier. The principal of these are the Bay of Bengal; the Arabian Sea, with its members, the Gulf of Cutch, Gulf of Oman, and the Persian Gulf; the Gulf of Aden with the Red Sea; the Channel of Mozambique; Encounter Bay, St. Vincent Gulf, Spencer Gulf, and the Great Australian Bight, in Australia.

The only *Islands* of considerable magnitude are Ceylon and Madagascar; but smaller islands and archipelagos are numerous, as Bourbon, Mauritius, Comoro, Amirantes, Seychelles, Socotra; the Laccadive, Maldive, and Chagos archipelagos; Rodrigues; the Andaman, Nicobar, and Mergui archipelagos; Keeling Islands; St Paul and Amsterdam; Kerguelen or Desolation Island, &c. Its larger *Affluents* are nearly all from the Asiatic continent; as the Irrawady, Brahmapootra, Ganges, Mahanuddy, Godavery, Kistna, Tapty, Nerbudda, Indus, and Euphrates; together with the Zambezé from Africa, and the Murray from Australia.

Currents.—The waters of the Indian Ocean being hotter than even those of the Gulf of Mexico, several warm currents flow out of it in various directions. One of these originates in the Bay of Bengal, and after passing through the Strait of Malacca, unites with other warm currents from the Java and China seas; and then flows out into the Pacific like another Gulf Stream, to which, indeed, both in its direction and effects, it bears numerous and striking resemblances. Another current, from the Arabian and Red seas, flows southwards between Africa and Madagascar, till it meets the Cape Current from the Atlantic south of Cape Colony. The latter current, formerly supposed to be flowing northward along the west coast of Africa, is now ascertained to be flowing southward, till, after uniting with the Mozambique Current, both find their way into the intensely cold waters of the Antarctic Ocean.

The **Arctic Ocean**, or north polar basin, is bounded in general by the northern shores of Europe, Asia, America, and Greenland, all of which remarkably conform to the parallel of 72°; and hence its form is nearly circular, and its usual breadth 2500 miles. In other directions it is bounded by the Arctic Circle, which separates it from the Atlantic and Pacific oceans, and forms the northern limit of sunshine in winter. Its greatest length from Behring Strait to that point on the Norwegian coast at which the Arctic Circle cuts the land—that is, along the meridian of 12½° E.—is 3240 miles; and the total area is estimated at 4,000,000 square miles. Except on the Atlantic side, the waters of this ocean are virtually land-locked, the outlet by Behring Strait being only 36 miles wide, with a maximum depth of 25 fathoms. Its only practicable entrance for ships is between Norway and Iceland, that being the path pursued by the north-east branch of the Gulf Stream, the remainder of the channel being occupied by a vast archipelago of islands which, though separated by deep straits, are either traversed by strong currents, or blocked up with gigantic icebergs. The principal *Branches* of the Arctic Ocean are, the White Sea, in Europe; the Gulfs of Kara, Obi, and Yenisei, in Asia; Behring Strait, between Asia and the New World; and Coronation Gulf, Melville Sound, Barrow Strait, Lancaster Sound, and Baffin Bay, in North America. The long-sought *North-West Passage*—that is to say, a navigable passage from European countries to China along the northern coast of America, has at last, after innumerable unsuccessful efforts continued for two centuries, been nominally effected by Captain Maclure, who, in 1856, achieved the hazardous task by sailing out of the Pacific through Behring Strait; then, turning eastward, pursued his course along the coast till he came to Cape Bathurst, at the entrance to Coronation Gulf; then northward, along the west coast of Banks' Land to Melville Sound, which he entered; and continued his dangerous voyage eastward to Baffin Bay and Davis Strait; and finally entered the Atlantic. Notwithstanding the success of this brilliant exploit, the route thus discovered is all but absolutely impracticable, and can never be of any avail in a commercial point of view; while the same route in the opposite direction remains still unaccomplished.

The *Rivers* that find their way into this ocean are, for the most part, of great magnitude. Having their sources as far south as the 50th parallel, in both hemispheres, they drain an area fully equal to that of the ocean which they enter, or considerably more than that of the continent of Europe. The chief of those from the Old World are the Dwina, Petchora, Obi, Yenisei, Lena, and Kolyma; and from the New World, the Colville, Mackenzie, and Coppermine. The northward direction of these rivers imparts a striking peculiarity to the annual thawing of their waters. As their upper courses belong to more temperate latitudes than their lower, the former are melted by the heat of the sun at an earlier date than the latter, and discharge their liberated contents into the valleys and estuaries below, which, being thus inundated by waters of a comparatively elevated temperature, speedily give way in turn; and thus, in a comparatively brief period, the entire ocean is covered with an immense volume of fresh water of more than 32° of temperature, which now becomes the prime mover of that *ocean-current* that every summer drifts the polar ice into the Atlantic. Another cause, however, co-operates in producing this phenomenon. The north-east branch of the Gulf Stream from the Atlantic enters the Arctic Ocean between Norway, on the one side, and Iceland and Spitzbergen on the other. Doubling the North Cape, it flows eastward, close to the shores of Lapland and Siberia, the rigorous climate of which it materially softens. Arriving at Behring Strait it is greatly increased in volume and force by the Japan Current from the Pacific, and now pursuing its circuitous journey it eventually arrives at Banks' Land and the Parry Islands, which divide its waters into three branches. The two southern branches pursue their way eastward through the two main channels of the North American archipelago, and, on arriving at Baffin Bay, reunite their waters; while the third holds a more northerly course around Greenland, till it reaches Spitzbergen, which turns it to the south-west; and now, flowing between Iceland and Greenland, it meets its lost members north of Newfoundland; and, finally, steering its course between the coast of the United States on the right and the ascending Gulf Stream on the left, it arrives at its native domain in the Gulf of Mexico.

The *Islands* of this ocean are but imperfectly known. They are for the most part uninhabited, and are important only as the temporary abodes of the whale, seal, and walrus-hunter. The principal groups are the following: Spitzbergen, Novaia Zemlia, and New Siberia, between the Pole and the Eastern Continent; and the great North American Archipelago, the chief members of which are the Parry Islands, Banks' Land, Boothia Felix, Cockburn Island, Cumberland Island, Cornwallis Island, North Devon, Ellesmere, and Greenland.

The **Antarctic Ocean** is far less accurately known to geographers than any of the other great oceanic basins, the cold being more intense, the winds and seas more boisterous, and the ice extending at least 10° nearer the equator than in the Arctic Basin. Navigators, however, have attained here a considerably higher latitude than in the seas surrounding the North Pole—Sir James Ross having, in 1841, penetrated to lat. 78° 4′, or within 840 miles of the South Pole. In this latitude, and immediately S. of New Zealand, his progress southward was arrested by an ice-bound shore, on which he landed, and which, in honour of his sovereign, he named Victoria Land. Other navigators, in approaching the pole from other directions, have encountered similar obstructions at considerably lower latitudes. Thus, Enderby Land lies on the Antarctic Circle, nearly due S. of Madagascar; and South Shetland, Louis Philippe Land, Trinity Land, and Graham Land, also near the Antarctic Circle, and south of Cape Horn. Probably, therefore, almost the entire area embraced by the Antarctic Circle is occupied by a continent which is nearly circular in form, and more than twice the size of Europe; which is covered by eternal snows, and wholly devoid of vegetation; the shores of which are guarded by gigantic volcanoes, or by impenetrable barriers of ice; and whose interior has never been trodden by the foot of man. One of these volcanoes, named Mount Erebus, was found by Sir James Ross to be 12,400 feet above the level of the sea, and in a state of constant activity; while Mount Terror, an extinct volcano, has an altitude of 9000 feet. Both of these are situated near the coast of Victoria Land.

The seas around this continent are remarkably shallow, the depth rarely exceeding 400 fathoms. The barometric pressure is also greatly less than in tropical regions (*see* p. 29). Sir James Ross determined the position of the South Magnetic Pole to be within the limits of Victoria Land—viz. in lat. 75° 5′ S., and lon. 145° 8′ E.

4. THE ATMOSPHERE.—Many of the phenomena of physical

geography are inexplicable without some previous acquaintance with that thin, aerial, and invisible fluid called the Atmosphere, which envelops the earth on all sides, which shares in its diurnal motion, and which accompanies it in its annual journey round the sun. In respect to *composition*, atmospheric air consists almost exclusively of two gaseous, elementary substances, oxygen and nitrogen, in the proportion of 21 parts by weight of the former, and 79 parts of the latter, or nearly in the ratio of 1 to 4. It also contains a little carbonic acid gas, a minute though very variable quantity of aqueous vapour, and a trace of ammonia. The oxygen and nitrogen are not chemically combined, but exist in a state of *mixture;* yet their relative proportions remain invariable, being the same on the summits of the highest mountains as in the deepest recesses of the surface, the same in the country as in the crowded city, and the same in the tropical as in the frigid zones.

On the contrary, the carbonic acid and vapour of water vary greatly in quantity in different localities, the one being affected by local causes, and the other mainly by changes of temperature. Notwithstanding its extreme lightness, the air, in common with all other material bodies, is affected by the all-pervading law of gravitation, and exerts a pressure on the surface of the earth which can easily be measured. According to Dr Prout, 100 cubic inches of pure dry air, at 60° of temperature, and the barometer standing at 30 inches, weigh 31 grains. Hence the weight on every square inch of surface at the level of the sea amounts to about 15 lb. avoirdupois, being the same as the weight of a column of water of equal base, 34 feet high, or of a column of mercury 30 inches high. Supposing the surface of a man's body to measure 15 square feet, it sustains a pressure of no less than 14 tons. Being a highly elastic fluid, the density and pressure of the atmosphere rapidly diminish as we ascend upward, 1000 feet of ascent, near the surface, roughly corresponding to a fall of 1 inch in the barometer; or, to speak more exactly, *As the elevation increases in arithmetical progression, the density and pressure decrease in geometrical progression.* Thus, at the level of the sea, the pressure on each square inch is 15 lb., or equal to a column of mercury 30 inches high; at 3.4 miles above the surface the pressure is only 7½ lb., or 15 inches of mercury; and at 6.8 miles of elevation the pressure is 3¾ lb., or 7½ inches of mercury. At greater elevations, however, this law does not hold; as many reasons combine to induce the belief that the atmosphere does not expand to an indefinite height, but terminates at an altitude of from 40 to 50 miles. Its *height* is also different in different latitudes, being considerably greater between the tropics than within the Polar Circles. This is owing partly to the greater centrifugal force that exists in the equatorial than in the polar regions, caused by the rotation of the earth around its axis, and partly to the high temperature of the earth's surface in low latitudes, which causes the air in contact with it to expand at the rate of $\frac{1}{460}$ of its volume for every increase of 1° of temperature. Sir James Ross states that, in Victoria Land, lat. 78°, the barometric pressure rarely exceeded 29 inches, whereas in the torrid zone it averages 30 inches.

When ascending the side of a mountain-chain, the traveller feels the cold increasing perceptibly in proportion to his elevation; and should the chain be sufficiently lofty, he will find the summit covered with perpetual snow. If the ascent is made within the Tropics, this difference of temperature arising from elevation is beautifully represented to the eye by a corresponding succession of climatic zones, each of which is occupied by a fauna and flora peculiar to itself, but quite analogous to the succession of zones, with their respective faunas and floras, that is traversed when proceeding from the equator to either pole. This beautiful phenomenon, of which the Andes and Himalaya afford the most striking examples, depends on the fact that any change in the density of the atmosphere is uniformly accompanied by a corresponding change in its temperature. When a gaseous body expands, a portion of its heat becomes latent, and the amount of heat required to raise it to any given temperature increases the more the gas expands. If there be no source of heat from which this additional quantity can be obtained, the gas will cool during expansion, by a portion of its free heat becoming latent. Generally speaking, the thermometer sinks 1° of Fahr. for every 330 feet of elevation.

Winds.—When the air is put in motion by any cause, a wind is produced; and no cause so powerfully contributes to such motion as local changes of temperature, arising from the unequal degree in which portions of the earth's surface are heated by the solar rays. In order to obtain a clear notion of the nature and direction of winds, it will be necessary to leave out of view, for the time, the various inequalities of the earth's surface, and to regard it as uniformly spherical. In tropical regions, where the sun is always vertical at noon, his rays fall perpendicularly on the surface, and consequently with a far greater heating power than if they came down slantingly, as in the temperate and frigid zones. The heated surface communicates its own temperature to the stratum of air in contact with it, causing the latter to expand, and, with a diminished density, to ascend through a higher stratum, supported by which it flows off towards the nearest pole, its place meanwhile being supplied by a counter-current proceeding from the pole to the equator. Hence we would expect that at any point on the surface in the northern hemisphere, northern winds (that is, winds *from* the north) would prevail throughout the year; while everywhere in the southern hemisphere they would blow incessantly from the south. And, were the earth at rest, and no inequalities on its surface, such would be the actual direction of the winds throughout the year. But the earth rotates on its axis from west to east every twenty-four hours; its equatorial parts moving at the rate of 1000 miles per hour, while at the poles the surface remains at rest. Hence, in passing from the higher latitudes towards the equator, the cold currents of air arrive progressively at regions of increased rotatory velocity; and as they cannot keep pace with this increase of motion, they necessarily hang back, and form currents flowing in a direction opposite to the rotation of the globe, or from *east* to *west;* and thus, by the combined effects of the rotation of the globe and the difference of temperature at its surface, the northern and southern currents are deflected and modified, so as to become respectively the permanent north-easterly and south-easterly currents, forming the magnificent phenomena of

The **Trade Winds.**—These winds extend, with occasional interruptions and modifications, from the vicinity of the equator to the 28th or 30th parallel, N. and S.—the limit varying according to the sun's northern or southern declination. Their action is most regular in the Atlantic and Pacific oceans; but their influence is neutralised in the vicinity of continents and large islands, by the currents that are generated on the land.

In the Indian Ocean and south-eastern Asia the Trade Winds undergo remarkable modifications, changing their direction at certain seasons of the year, and hence called

Monsoons, a term derived from the Malay word *musim*, a season. They prevail over a tract extending from lat. 7° S. to the Tropic of Cancer, and from the E. coast of Africa to Japan and the W. part of the Pacific Ocean. They blow for six months of the year in one direction, and for the other six in an opposite one; the change occurring about the 15th April and the 15th October. On the north side of the equator the N.E. monsoon prevails, with little variation, from October to April; while from April to October it is replaced by the S.W. monsoon. South of the equator the N.W. monsoon blows from October to April, constituting the rainy season in the southern part of the Indian Ocean; while from April to October the S.E. monsoon holds sway, and forms the dry season. The last-named monsoon may be considered as identical with the S.E. Trade Wind. In general, the monsoons blow towards the continent during summer, and in an opposite direction in winter. They regulate the alternations of the wet and dry seasons throughout south-eastern Asia—the rainy season of the W. coast of India corresponding with the prevalence of the S.W. monsoon, and that of the E. coast with the S.E. monsoon. They are also of great importance to commerce, for by them a ship may be wafted to a distant port, where she remains till the monsoon changes, and is then aided by it home again.

Zone of Calms and Variable Winds.—In the Atlantic and Pacific oceans, immediately under the equator, where the N.E. and S.E.

Trade Winds come into collision, there occurs a zone of calms and variable winds; there being a calm when the opposing winds wholly neutralise each other, and a wind, which is usually from the east, when either predominates. This zone varies in breadth from 150 to 500 miles, according to the season of the year, and is perpetually shifting its position. In March and April it extends from lat. 5° S. to 2° N.; in July and August from 7° N. to 12 N.; thus ranging over 17° of latitude. As each of the trade winds has traversed a great extent of ocean before arriving at the equator, they become highly charged with vapour; and hence this zone is characterised by constant precipitation, the rain falling at irregular intervals and at all hours of the day. The heat is great, and thunder-storms are frequent; and perhaps there is no part of the ocean more dreaded by mariners than the zone of calms and variables.

Recent investigations have shown that similar narrow belts of calms occur across the great oceans near the Tropics of Cancer and Capricorn, where the trade winds come into collision with the prevailing S.W. and N.W. winds of the temperate zones.

Region of S.W. and N.W. Winds.—We have seen that the heated air of the Torrid Zone, forced upwards by colder and denser currents, finds its way to the Frigid Zones. On quitting the tropics it begins to cool, and consequently to descend, arriving at the surface about the 30th parallel of latitude in both hemispheres. Were the earth stationary, and no opposing current from the polar regions encountering them, it is obvious that south winds would prevail over the entire N. temperate zone, and north winds over the S. temperate zone. But the earth rotates from west to east, and the wind on its way from the tropics to the poles is ever arriving at zones of the surface possessed of less rotatory velocity than itself; and it will therefore, so far as this cause is concerned, manifest itself as a *west* wind. Combining, now, both these causes, the resultant effect is that in the N. temperate zone S.W. winds must prevail, while in the S. temperate zone N.W. winds will predominate. Both these winds, however, are subject to great irregularities, mainly owing to their having to encounter the great polar currents that are ever proceeding from the poles to the equator. The winds which result from such collisions must necessarily take a *mean* direction, depending on the relative force of the opposing currents; but this direction, though very variable, is chiefly *westerly*. In the North Atlantic they are chiefly from the S.W.; and the effect is, that a sailing vessel which takes forty days from Liverpool to New York can make its return voyage in twenty-three days. South of the equator, between the parallels of 30° and 50° S., the winds are very variable and inconstant; while in the N. frigid zone no regular succession of winds has been observed, but northern winds are the most frequent.

Land and Sea Breezes.—On islands and near the shores of the continents, especially in warm and tropical regions, the wind during the day blows from the sea towards the land, while during the night it pursues a contrary direction. After the explanations given above, the cause of this becomes sufficiently obvious. The sea and the land are very unequally heated by the solar beams. About sunrise and sunset the temperature of both is nearly equal, and there is consequently no wind either way; but shortly after sunrise the land becomes warmer than the water, in consequence of the more powerful action of the solar rays; the temperature of the stratum of air next the surface is increased and its density lessened; it must therefore ascend to the upper regions of the atmosphere, leaving behind a vacuum which is immediately occupied by colder and denser air from the ocean. Thus is originated a *sea-breeze*, which attains its greatest velocity at the period of the maximum heat of the day, and gradually declines towards evening. During night, when the temperature of the sea exceeds that of the land, the current of air must necessarily flow in an opposite direction, and produce what is called the *land-breeze.*

The Vapour of Water and its Products.—In considering the constituents of the atmosphere on a former page, we found that the vapour of water is one of them. The quantity of vapour in the atmosphere, which is always very small, varies with the temperature of the latter, being greater when the temperature is high and smaller when it is low. Sir John Leslie has shown by numerous experiments that the air can hold the 160th part of its own weight of vapour in suspension when its temperature is at the freezing-point, or 32° Fahr.; the 80th part of its weight at the temperature of 59°; the 40th part at 86°; the 20th part at 113°; and the 10th part at 140°. Seas, rivers, lakes, and moist ground are the sources from which the vapour in the atmosphere emanates. When water is thus passing from the liquid into the gaseous or invisible form, it is said to *evaporate.* Evaporation takes place at all temperatures, and is caused chiefly by the action of winds and of the solar heat on the surface of the earth; and the more intense this action is, the greater becomes the quantity of moisture that rises into the atmosphere. When the air has received as much vapour as it is capable of holding in the invisible form at any given temperature, it is said to be *saturated.* Should any more vapour enter it at this temperature, or should its temperature be reduced to any extent, the superabundant vapour instantly becomes visible, and assumes the form of mist or clouds, or is precipitated as dew, hoar-frost, rain, snow, or hail. Should the reduction of temperature take place at a considerable elevation above the surface of the earth, by means of a cold current of air coming into contact with a warmer one already at the point of saturation, *clouds* will be the form which the superabundant vapour will assume; but if the reduction takes place at a lower level, so that the cloud rests on the ground instead of floating in the upper regions of the atmosphere, it is called a *fog* or *mist.* Clouds and mist are identical in their nature, and only differ in respect to elevation; for in each of them the vapour, formerly gaseous and invisible, has passed into the form of minute, visible globules, which, from being hollow within, are possessed of such buoyancy as to be capable of floating in the atmosphere. When the surface of the ground has been reduced by radiation to a lower temperature than the stratum of air in contact with it, a portion of the vapour contained in the latter becomes condensed, and assumes the form of *dew;* and when the radiation has proceeded so far as to reduce the surface below the freezing-point, *hoar-frost* is the product. The quantity of dew, however, which is deposited in any given object depends not only on its temperature, but in a great measure also on the nature of its materials, its texture, and the roughness or smoothness of its surface. Thus, while metals, stones, and wood, are found comparatively dry, living plants of every form are copiously laden with dew: substances having a close texture are unfavourable to its formation, while those that are loosely compacted, as cloth, wool, down, cotton, &c., are highly favourable; and those surfaces which part with their heat least readily, as, for example, polished metals, contract the least dew; while those that part with their heat most readily—viz. roughened or painted surfaces, contract the most.

When the temperature that has led to the formation of the minute hollow vesicles of which a cloud consists has been reduced still lower, the vesicles become larger; then unite in twos and threes; and ultimately, by reason of their density and increased gravity, fall to the ground in large drops of *rain.* When the vesicles have been exposed to an intensely cold current of air, they are congealed, or solidified, into minute, icy crystals; and when many of these collect together, they usually assume a highly symmetrical and beautiful shape before descending to the earth in the form of flakes of *snow.* Captain Scoresby, during his Arctic voyages, observed nearly a hundred different forms of snow-flakes, many of which were extremely beautiful. Should the snow-flakes, in descending towards the surface, pass through a warm stratum of air, they melt and become *rain-drops;* and, on the other hand, should the rain-drops, while descending, pass through a stratum of very cold air, they are converted into *hailstones.*

Distribution of Rain.—Rain falls very unequally in different regions of the globe, but in general the greatest quantity of rain falls in warm climates, as evaporation proceeds there more rapidly than in cold and temperate regions. The following generalisations, which are the result of numerous observations, will be found useful:—

1. Rain is more abundant in tropical regions than under higher latitudes; but the number of rainy days is greater the farther the place is from the equator. The annual average of rain between the tropics is 96 inches, and the number of rainy days is only 80; while in the two temperate zones the average annual fall is only 37 inches, but the number of days on which rain falls varies from 54, in the N. of Syria, to 169 at St Petersburg.

2. The annual amount of rain decreases in ascending from low plains to elevated plateaux. Thus, on the southern shores of the Caspian, the fall of rain is very great; while it is almost wholly unknown on the adjacent table-land of Iran, as also in the great elevated deserts of Sahara and Gobi, in which a shower of rain does not fall for many years in succession.

3. On the contrary, the amount of rain *increases* in ascending from plains to the rugged slopes of mountain-chains. Thus, while at Paris

only 20 inches of rain fall annually, upwards of thrice that quantity falls on the sides of the Great St Bernard; and in England the quantity that falls in the mountainous districts is more than double that of the less elevated portions of the country.

4. The amount of rain decreases as we proceed from the shores of continents towards their interior: thus, while on the W. coast of Ireland, Norway, and Portugal, the annual average is 47, 80, and 111 inches, respectively, in central and eastern Europe it is only 15 inches; and a similar disparity exists between the coasts and the interior of Siberia, Northern Africa, North and South America, and Australia. There are important exceptions, however, to this rule, arising from the direction and position of mountain-chains, and from the character of the winds (whether dry or humid) to which any given place is exposed. For example, one side of a mountain-chain may be humid, while the other is comparatively rainless. The Andes in South America, the mountains of Norway, and Mount Atlas in North Africa, afford striking examples. Each of these chains intercepts the rain-bearing winds, and deprives them of their moisture—copiously irrigating the countries on the one side, and depriving those on the other of nearly all their moisture.

5. Within the tropics, the *eastern coasts* of the continents, owing to their exposure to the trade-winds—which blow from the north-east and south-east—are more humid than the western; while in the temperate zone their *western sides*, from being exposed to westerly winds charged with moisture—received in their passage across the Atlantic and Pacific oceans—are more humid than the eastern.—(*See under* "Europe," *art.* "Climate.")

5. CLIMATE.—By the climate of a place is meant the prevailing character of its weather, or all those states and changes of its atmosphere which sensibly affect the organs of plants and animals. The peculiarities of climate are mainly attributable to the following causes:—

1. The **Latitude** of the place.—This determines the amount of solar heat which the place enjoys—which amount depends, not merely on the length of time it is continuously exposed to the solar rays, but especially on the direction of the rays when the sun is in the meridian. Between the tropics the solar rays descend vertically at noon, and hence produce their maximum effect; but the more remote the place is from the torrid zone the rays descend more and more slantingly—their obliquity being the greatest in winter and the smallest in summer.

2. Its **Elevation** above the sea-level.—The more elevated any place is, the lower is its temperature; and a change of level of only a few feet will diminish the temperature of the place as much as a change of latitude amounting to many miles. In the torrid zone an ascent of 330 feet sinks the thermometer 1° Fahr.; but the rate is not uniform as the ascent is continued—less than 330 feet being sufficient for reducing the temperature another degree. A smaller elevation will also suffice for producing this effect in higher latitudes—being in the British Isles only 270 feet; and, generally, in the N. temperate zone, of two adjacent places, if the one is 250 feet higher than the other, the temperature of the former will be 1° Fahr. lower than that of the latter. By continuing the ascent in any

latitude, we at length arrive at what is called the *Snow-line*, or the *limit of perpetual congelation.* This line attains its maximum elevation near the Tropic of Capricorn (at least in the New World), and gradually descends—though at a rate not yet exactly ascertained—as it proceeds to the poles. In the Antarctic regions it reaches the sea-level between the 67th and 71st parallel; but in the northern hemisphere it is more than doubtful whether it touches the sea at all: for here the extreme dryness of the climate and the perpetual day of summer occasion the complete disappearance of the snow, even in Melville Island, in low and level situations, though the mean annual temperature is as low as zero. The height of the snow-line is not regulated exclusively by the degree of latitude; but depends very much on the exposure of the place, the character of the prevailing winds, and on the depth of the snow that has fallen during winter. The following table shows the elevation of the snow-line in different latitudes, as exhibited on the sides of lofty mountains:—

LIMIT OF SNOW-LINE IN DIFFERENT LATITUDES.

	Lat.	Feet high.
EUROPE.		
North Cape,	71°10′N.	2,400
Sulitelma, Norway,	67 4 ...	3,500
Grampians, Scotland*	56 48 ...	4,500 ?
Pyrenees, Spain,	42 40 ...	8,000
Alps, Mt. Blanc,	45 50 ...	8,900
Etna, Sicily,	37 45 ...	9,500
Sierra Nevada, Spain,	37 10 ...	11,200
AFRICA.		
Atlas Range (Miltsin)†	31° 0′N.	11,400
Peak of Teneriffe,‡	28 16 ...	12,182
Abba Jarat, Abyssinia,	14 0 ...	14,000
Kilimandjaro, Zanzibar,	3 40 S.	18,000 ?
ASIA.		
Aldan Mts., Siberia,	60°55′N.	4,500
Mts. of Kamtschatka,	56 40 ...	5,200
Altai Mts.,	50 00 ...	7,000
Himalaya, S. side,	27 30 ...	12,982
Himalaya, N. side,	28 30 ...	16,630

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* None of the mountains of the British Isles attains the height of the snow-line; but Ben Nevis, the highest of them, whose height is 4368 feet, approaches it very closely, as it generally retains the snow in the deeper ravines all the year round.

† Mount Miltsin falls short of the limit of perpetual snow; but snow is seldom absent from its summit.

‡ In summer this mountain is quite free from snow, except in a deep depression on the northern slope, called Cueva del Yelo. The entire summit is covered with snow for only four months in the year.

LIMIT OF SNOW-LINE—*Continued.*

	Lat.	Feet high.
OCEANIA.		
Wurragong Mts., Australia, ...	37° 0′ S.	6,563
Mt. Egmont, New Zealand, ...	39 0 ...	7,000
AMERICA.		
Rocky Mts. (Freemont's Peak) Oregon, ...	43°15′N.	12,500
Popocatepetl, Mexico,..........................	19 20 ...	14,000
Andes of Quito (Chimborazo), ...	1 30 S.	15,500
Andes of Bolivia (Sorata), ...	15 30 ...	16,000
Andes, Western Cordillera (Gualatieri) ...	19 0 ...	18,500

3. **Slope,** or **Aspect,** affects the climate of a country, especially in the temperate zone. If the slope is towards the sun in the meridian, the rays of that luminary fall more directly on the surface, and therefore produce a greater effect than if the place is level; while, on the other hand, if the surface inclines towards the north, the contrary effect is produced. Thus, in Siberia and British America, where the slope is northward, as indicated by the direction of the rivers, the climate is incomparably more rigorous than in the British Isles and Scandinavia, though situated between the same parallels of latitude. In the south of Siberia mercury freezes in winter; whereas in Ireland the myrtle grows in the open air. Even in the same locality the greatest diversity of climate prevails on the opposite sides of a mountain-range. Thus, on the southern slopes of the Alps of the Valais, the vine attains to its utmost perfection, while the northern slope is densely covered with ice and snow.

4. **The Situation of a Country in respect to Large Tracts of Land or Water.**—The temperature of the ocean is more equable than that of the land, being less affected by the action of the solar rays and by radiation. Hence, through the agency of the winds, those countries which are situated near the ocean are less subject to the extremes of heat and cold than other countries under the same latitude, situated in the interior of continents. Thus, London enjoys a milder winter and a cooler summer than Paris, which is 7° of latitude farther south; and Dublin, in lat. 53° 20′, has a winter temperature of 40° and a summer temperature of 60°, while St Petersburg, in lat. 59° 56′, has a winter temperature of only 19° and a summer temperature of nearly 62°.

In the northern hemisphere a country is rendered hotter by having a large tract of land to the south and sea to the north, and cooler when these relations are reversed: thus the climate of India is much more supportable than that of Northern Africa between the same parallels.

5. Other important elements of climate, such as the *prevalence of particular winds,* proximity to *ocean-currents,* the *annual fall of*

rain, and the *direction and relative position of mountain-chains*, together with the *nature of the soil* and the *degree of cultivation* to which it has been subjected, have for the most part been treated of in previous sections of this work, and cannot here be resumed.

Isothermal Lines and Climatic Zones.—As the temperature of any given place depends on a multitude of causes besides latitude, it is obvious that the old designations of *torrid*, *temperate*, and *frigid zones*, bounded by the Tropics and the Polar Circles, do not adequately express the temperature, and far less the general climatic character, of the different parts of the earth's surface. Humboldt and others have accordingly substituted other lines, instead of the Parallels, as the true boundaries of climatic zones—viz. *Isothermal*, *Isocheimenal*, and *Isotheral lines*. The mean annual temperature of any given place may be readily ascertained by means of the thermometer; and imaginary lines connecting together all the places in the same hemisphere, having the same *mean annual temperature*, are called Isotherms. The Isocheimenals are similar lines connecting places that have the *same winter temperature*, and the Isotheral lines are those drawn between places having the *same summer temperature*. These lines of equal temperature approximate, more or less, to the direction of the equator, though they are nowhere parallel to it. They diverge from it more in the northern than in the southern hemisphere, and greatly more in high than in low latitudes. The hottest portion of the earth's surface is an oval-shaped tract in East Africa, extending from Lake Tchad to Mecca and the Strait of Babelmandeb, having a mean annual temperature of 81°; and the coldest, so far as yet ascertained, is a long narrow belt in the Arctic Ocean, midway between Behring Strait and the North Pole, and extending from Melville Island, in the direction of New Siberia, with an average temperature of 0° Fahr. It appears, therefore, that the hottest region is not under the equator, nor the coldest under the pole; and that all the lines of equal temperature in the northern hemisphere attain their highest latitude in the eastern side of the Atlantic Ocean—owing, no doubt, to the high temperature of the Gulf Stream, which flows northward along the western shores of Europe. By means of these Isotherms each hemisphere is divided by the meteorologist into six climatic zones, named respectively, the *hot* or equatorial, the *warm*, *mild*, *cool*, *cold*, and *frigid* or polar zone.

The *Equatorial Zone* extends on both sides of the equator, is bounded by the isotherms of 77°, and embraces Central America, the West India Islands, the portion of South America lying north of a line drawn from Quito to Bahia, all Africa between the Atlas chain and the 15th degree of S. latitude, and the north of Australia. The *Warm Zone* is bounded on the south by the equatorial zone, and on the north by the isotherm of 59°, which, in the New World, passes through San Francisco and Cape Hatteras; and, in the Old World, through the north of Spain, Rome, Gallipoli, the north of Asia Minor, the south of the Caspian, Lake Koko-Nor, the mouth of the Hoang-Ho, and the capital of Japan. The *Mild Zone* is bounded on the south by the warm zone, and on the north by the isotherm of 41°, which passes through the Aleutian Islands, Sitka, a little south of Lake Superior, through the centre of Nova Scotia; and, in the Old World, through Bergen, Christiania, Stockholm, Riga, Moscow, Orenburg, and the southern extremity of Saghalian Island. The *Cool Zone* is bounded on the north by the isotherm of 32°; which, in the New World, passes Cape Romanzoff, Cumberland House, and the southern extremity of James Bay, south of Nain in Labrador, and north of Cape Farewell in Greenland; and, in the Old World, through the north of Iceland, Hammerfest, head of the Gulf of Bothnia, Archangel, Tobolsk, and to the south of Lake Baikal. The *Cold Zone* is bounded on the north by the isotherm of 5°, which passes through the centre of the North American Archipelago, north of Greenland, and through the extreme north of Siberia. And, lastly, the *Polar Zone*, whose southern limit is the isotherm of 5°, embraces all the remainder of the Arctic regions.

In order to illustrate this subject more fully, we subjoin a table of the mean *annual*, mean *winter*, and mean *summer* temperature of a number of the most important cities in the world.

Cities.	Lat.	Mean annual temp.	Mean winter temp.	Mean summer temp.
London,	51°30′N.	50° 3′	39° 3′	62° 8′
Edinburgh,	55 57	47 1	38 4	57 2
Dublin,	53 20	49 0	39 8	59 6
Paris,	48 50	51 3	37 8	64 5
Bordeaux,	44 50	57 3	43 1	71 08
Marseilles,	43 18	58 3	45 22	72 93
Lisbon,	38 42	61 40	52 52	70 94
Madrid,	40 24	58 2	43 16	76 40
Gibraltar,	36 07	67 44	57 93	77 82
Turin,	45 11	53 13	33 46	71 51
Rome,	41 53	59 30	44 5	75 0
Naples,	40 52	60 26	47 65	74 38
Constantinople,	41 0	56 47	40 94	71 36
Brussels,	50 51	50 68	38 61	64 04
Leipzig,	51 20	46 41	31 79	60 25
Geneva,	46 12	52 71	34 04	70 36
Vienna,	48 12	51 3	32 9	69 4
Berlin,	52 30	48 16	31 45	64 56
Copenhagen,	55 41	46 56	31 31	62 70
Christiania,	59 55	41 45	23 18	59 88
Stockholm,	59 21	42 27	26 04	60 43
St Petersburg,	59 56	39 61	18 66	61 68
Warsaw,	52 13	44 15	24 91	63 21
Moscow,	53 45	40 02	15 20	63 97
Kazan,	55 48	35 45	6 34	62 39
Irkutsk,	52 17	32 62	0 90	61 50
Yakutsk,	62 0	13 5	—36 37	61 72
Pekin,	39 54	54 8	26 70	81 10
Canton,	23 8	69 88	54 88	82 00
Singapore,	1 17	80 68	79 24	81 61

Mean Annual Temperature of Important Cities—*Continued.*

Cities.	Lat.	Mean annual temp.	Mean winter temp.	Mean summer temp.
Ava, ...	21°51′N.	78°39′	68°82′	83°59′
Calcutta, ...	22 35	82 41	72 25	86 72
Nagpoor, ...	21 9	79 00	69 00	89 00
Madras, ...	13 4	81 94	77 66	86 18
Trincomalee, . . .	8 33	80 7	77 33	83 80
Seringapatam, . .	12 45	75 76	71 33	74 97
Bombay, ...	18 56	81 27	77 44	82 84
Mooltan, ...	30 12	73	59	88
Cabool, ...	34 30	68 0	41	83
Bagdad	33 21	73 74	49 62	93 13
Jerusalem, ...	31 47	62 63	49 61	73 88
Mocha, ...	13 20	76 91	79 78	86
Cairo, ...	30 2	72 17	58 52	85 1
Tunis, ...	36 48	68 77	55 76	83 00
Marocco, ...	31 37	68	59	80
Sierra Leone, . . .	8 29	79	79	77
Timbuctoo, . . .	16 0	79	68	83
Lake Tchad, . . .	14 0	81	68	83
Melville I., ...	74 47	1 24	—28 45	37 08
Nain, ...	57 10	27 82	3 66	47 90
Quebec, ...	46 48	41 85	14 15	68 08
Montreal, ...	45 30	45 8	17 79	71 40
Halifax, ...	44 39	40 08	21 00	61 00
Boston, ...	42 21	48 47	28 29	69 04
New York, . . .	40 42	51 58	30 12	70 3
Philadelphia, . . .	39 57	50 78	30 07	71 36
New Orleans, . . .	29 57	69 80	55 80	82 04
Mexico, ...	19 25	60 60	53 64	65 23
Vera Cruz, ...	19 12	77 02	70 88	81 92
Havannah, ...	23 9	77 17	72 98	81 35
George Town, . . .	6 49	81	75 0	90 00
Mozambique, . . .	15 2 S.	78	79	73
Port Natal, . . .	29 53	70	76	68
Cape Town, . . .	33 56	67 3	70	58 3
Quito, ...	0 14	73 31	77 60	59 71
Lima, ...	12 2	73 3	77 6	68 10
Rio de Janeiro, . .	22 54	73 75	79 15	68 60
Monte Video, . . .	34 54	68 83	77 33	57 33
Batavia, ...	6 9	78 33	78 67	78 17
W. Australia (Perth),	31 57	56	72 25	54
Melbourne, . . .	37 58	59	67 9	48 3
Sydney, ...	33 51	66 8	74	55 5
Hobart Town, . . .	42 53	52 37	63 06	42 14
Auckland, ...	36 51	58 58	66 92	50 75

6. Mineralogy.—The sixty-two constituent elements forming the earth's crust are, in general, characterised by a strong

affinity for each other, disposing them to form compound bodies, each of which possesses properties widely different from those of their constituents. These compounds are termed *minerals*, and the science which treats of their forms, composition, and other properties, is called Mineralogy. The number of minerals already analysed and described is very great. Professor Nicol of Aberdeen, in his elaborate *Manual of Mineralogy*, describes no fewer than 506 *species*, some of which embrace a considerable number of *varieties*.

The 506 species are arranged into 37 *families*, and 7 *orders or classes*, as shown in the following Table, in which the most common species belonging to each family are enumerated :—

Orders.	Families.	No. of Species.	Examples of Species.
Oxidised stones (12 *families*.)	Quartz,	2	Rock crystal, amethyst, topaz, cairngorm stone, jasper, Lydian stone, hornstone, *quartz*, flint, calcedony, agate, onyx, *opal*.
...	Felspar,	14	Common felspar, compact felspar, albite, obsidian pearlstone, pitchstone, pumice, Labradorite.
...	Scapolite,	13	Scapolite, nuttalite, prehnite.
...	Haloid Stones,	9	Lazulite, calaite, alunite or alum-stone.
...	Leucite,	8	Leucite, or amphigene, lapis-lazuli.
...	Zeolites,	22	Analcime, natrolite or mesotype, Scolezite, Thomsonite, stilbite, Heulandite, Brewsterite, apophyllite, chabasite, harmotome, laumonite.
...	Mica,	31	Common or potash mica; chlorite, talc, Schiller-spar, serpentine, Brucite or native magnesia.
...	Hornblende,	20	Hornblende, augite, hypersthene, bronzite, diallage, rhodonite or manganese-spar.
...	Clays,	24	Kaolin, clay, rock-soap, green-earth, yellow-earth, fuller's-earth, soapstone, meerschaum.
...	Garnet,	15	Garnet, idocrase, epidote, axinite, cyanite, andalusite, staurolite.
...	Gems,	16	Zircon, spinel, corundum or sapphire, emery, topaz, beryl or emerald, schorl or tourmaline, chrysolite or olivin.
...	Metallic stones,	24	Lievrite, Allanite.
Saline stones, (5 *families*.)	Calc-spar,	6	Calc-spar or carbonate of lime, dolomite, arragonite.
...	Fluor-spar,	18	Fluor-spar, apatite, boracite, datolite.

Families and Orders of Minerals—*Continued.*

Orders.	Families.	No. of Species.	Examples of Species.
Saline stones, (5 *families.*)	Heavy spar,	7	Barytes or sulphate of barytes, witherite or carbonate of barytes, celestine, strontianite.
...	Gypsum,	7	Gypsum or sulphate of lime, pharmacolite.
...	Rock salt,	28	Rock salt or muriate of soda, glauber salt or sulphate of soda, natron or carbonate of soda, borax, nitre, or saltpetre, or nitrate of potash, epsom salt or sulphate of magnesia, alum.
Saline ores, (3 *families.*)	Sparry iron ores,	17	Siderite or carbonate of iron, diallogite or carbonate of magnesia, calamine or carbonate of zinc.
...	Copper salts,	3	Azurite or blue carbonate of copper, malachite or green carbonate of copper, Olivenite or arseniate of copper, Vivianite or phosphate of iron, erythrine.
...	Lead salts,	27	Cerussite or carbonate of lead, Anglesite or sulphate of lead, pyromorphite or phosphate of lead.
Oxidised ores, (5 *families.*)	Oxid. iron ores,	9	Magnetite or magnetic iron, chromite or chromate of iron, hæmatite.
...	Tin ores,	12	Cassiterite or oxide of tin, columbite, tantalite, sphene, rutile.
...	Manganese ores,	10	Pyrolusite, manganite, wad.
...	Red copper ores,	4	Cuprite, zincite.
...	White antimony ores,	2	Valentinite, arsenite.
Native metals,	Only one family,	18	Platina, gold, silver, mercury, lead, iron, &c.
Sulphureted metals, (6 *families.*)	Pyrites,	22	Iron pyrites, mispickel, cobaltine.
...	Lead glance,	17	Galena or sulpuret of lead.
...	Grey antimony ores,	16	Stibine or sulphuret of antimony.
...	Grey copper ores,	11	Grey copper, bournonite, stannine.
...	Blendes,	5	Blende or sulphuret of zinc, Greenockite.
...	Ruby blendes,	6	Pyrargyrite or red silver, cinnabar or sulphuret of mercury, realgar, orpiment.
Inflammables, (5 *families.*)	Sulphur,	2	Sulphur, selen-sulphur.
...	Diamond,	1	Diamond or crystallised carbon.
...	Coal,	5	Graphite or plumbago, anthracite, common coal, lignite or brown coal, peat.
...	Mineral resins,	20	Bitumen or naphtha, asphalt, amber.
...	Inflam. salts,	2	Mellite or honeystone, oxalite.

7. Geology.—Minerals aggregated together, so as to form large masses, are technically called *rocks*. These rocks, according to their structure, are of two kinds: either they consist of minute particles of one and the same mineral, or of two, three, or more different minerals aggregated together. The former are called *simple*, the latter *mixed rocks*. Thus, for instance, *marble*, consisting of nothing but grains of carbonate of lime, is a simple rock; while *granite*, on the contrary, which is made up of small crystals of quartz, felspar, and mica, is a mixed rock. The component parts of a rock are either crystallised together, or united by a non-crystalline cement, in the same manner as mortar binds the stones of a wall. In many rocks the cohesion is very great, as for instance in greenstone; while in others it is but slight, as in sandstone, gravel, coal, &c. As compared with the vast variety of minerals, the number of distinct rocks is exceedingly small. They are also pretty uniformly distributed over the globe, while none of them is peculiar to any particular country. Thus, while the plants and animals of tropical regions differ exceedingly from those of the frigid zone, the materials which form the mountain-ranges, as well as the pebbles along the sea-shore, are everywhere the same. Notwithstanding, however, this general uniformity, there is considerable local variety, depending on the geological character of the place. Thus a traveller setting out from London, either to Berwick or Land's-End, will find the character of the rocks continually varying as he proceeds from county to county; and before he arrives at his destination, he will have passed in review almost every variety of rock in the geological scale. In like manner, when a considerable *section* of the earth's crust is exposed to view—as in sea-cliffs, quarries, mines, and railway cuttings—a great variety of rocks is discernible; but they may be all reduced to two principal kinds. They are either arranged in beds or layers, and hence known as *stratified rocks*; or they are found in shapeless, indeterminate masses, destitute of any such arrangement, and therefore called *unstratified*.

These two classes, the most generic which can be employed, receive also other names, which have a reference to their widely different origin, or to the opposite agencies which led to their formation. Thus the *stratified* rocks are also named *aqueous* or *sedimentary*—there being no doubt of their having been deposited as sediment by the waters of the ocean, seas, lakes, and rivers, which always hold mineral matter in suspension. The most casual observer will have noticed that such sediment always arranges itself in regular layers, or strata, at the bottom; and that a section of such sedimentary deposits presents the very same appearance as he daily witnesses in the face of a sandstone quarry, a bank of gravel, or a coal-pit. The lakes and seas are at the present moment depositing their sediment in this way—the mineral matter being supplied by rivers, tides, ocean-currents, &c. In course of time a series of layers will be formed, not indeed perfectly parallel, like the leaves of a book, but still spread out in a flat or horizontal manner.

The *unstratified rocks*, on the other hand, are termed *igneous*, being regarded as having been formed by the agency of fire, at a time when the temperature of the earth's crust was immeasurably higher than at present. Most geologists are of opinion that our planet was in an incandescent state in the earlier stages of its existence, just as the sun and fixed stars are by some supposed to be at the present day. In the course of ages, according to this hypothesis, the exterior portion gradually cooled down, and the materials of which it consisted, previously in a molten state, came by degrees to assume the consolidated form which the crust of the earth now presents, while the interior still retains its former intense heat. Whatever view we may form of this hypothesis, there can be no doubt of the fact, that the lower we penetrate into the bowels of the earth the temperature gradually increases. A thermometer placed in any locality, only four feet below the surface of the earth, no longer indicates the changes of the daily temperature, but merely those of the year. Again, at a depth of from 60 to 90 feet (according as the material passed through is solid rock, clay, sand, or water), it indicates everywhere and at all times the same temperature, which is neither affected by the hottest summer nor by the coldest winter. Below this depth, it has been found that a rise of 1 degree of Fahrenheit's thermometer takes place for every 50 or 55 feet of descent. Calculating at this rate of increase, a temperature of 2400° Fahr. would be reached at a depth of 25 miles, sufficient to keep in fusion such rocks as basalt, greenstone, and porphyry; at a depth of 36 miles the temperature would be 3272°, sufficient to melt iron; and at a depth of 54 miles, a heat of 4892° would prevail—a temperature at which all known substances would pass into the liquid or molten form. The phenomena of hot springs, volcanoes, and earthquakes, afford other and independent evidence of the intense heat prevailing in the interior of our planet. The igneous rocks have everywhere the appearance of having existed at a former period in a molten state; and the numerous varieties of beautiful crystals, found associated with them, are a striking testimony of their having cooled down with great slowness and regularity.

IGNEOUS ROCKS.—Generally speaking, the igneous rocks occupy a lower position in the crust than the aqueous; though they are often seen overlying the latter, or separating the strata of which they consist, or forcing their way through these strata in veins, rents, and fissures. They are usually divided into three principal kinds—*granitic*, *trappean*, and *volcanic*. The first of these is reckoned the oldest, as it is generally found underlying or associated with the oldest series of the stratified rocks; the second is considered more recent in its origin, because occurring for the most part among the secondary and tertiary formations; and the third, as the newest of all, being generally found associated with those modern formations which have been deposited since the tertiary era. The following are the principal rocks belonging to these three varieties, beginning with the lowest:—

GRANITIC: Common granite (consisting of small regular crystals of quartz, felspar, and mica), porphyry or porphyritic granite, syenite, protogine, pegmatite, hornblende rock, primitive greenstone, serpentine, felspathic rock, &c.

TRAPPEAN: Basalt, greenstone or dolerite, clinkstone, compact felspar, hornstone, pitchstone, claystone, amygdaloid, trap-tuff, &c.

VOLCANIC: Lava, trachyte, obsidian, pumice, pearlstone, tufa, scoriæ, palagonite, sulphur, &c.

STRATIFIED ROCKS.—These have been variously arranged at different times, according as the data of the geologist increased in number and precision; but we can here merely state the classification presently in use. By a careful examination of the mineralogical and palæontological character of the strata of different countries, the following nine groups or systems are recognised by all geologists, all of which occur in the *same invariable order*, though frequently one or more members of the series are wanting. These nine systems are further classified into three great series—viz. the Palæozoic, Mesozoic or Secondary, and Cainozoic or Tertiary series. Proceeding from the lowest stratified deposits we have,—

1. **The Crystalline Strata**, or Metamorphic Rocks.—These rocks are usually found immediately above the granite, separating it from the Silurian strata above, and embracing gneiss, mica-schist, hornblende-schist, talc-schist, actynolite-schist, chlorite-schist, quartz-rock, and primary limestone. Although gneiss generally occupies the lowest place in the series, these rocks do not follow any invariable order of superposition, and not unfrequently one or more of them are wholly wanting. They are also called *Primary Rocks*, because underlying the fossiliferous strata; and *Non-fossiliferous Rocks*, as being totally destitute of organic remains.

2. **The Silurian System**, so called on account of its huge development in south-eastern Wales (once inhabited by the *Silures*, an ancient British tribe), consists of five great subdivisions, called *formations*, which have an aggregate thickness of 8000 feet, or 1½ miles, without including the Cambrian group, the thickness of which is very uncertain. The order of succession of these formations, commencing with the lowest, which rests on the Crystalline Strata, is, according to Lyell, as follows:—

(1) The *Cambrian group*, chiefly occurring in North Wales (the ancient *Cambria*), in the S. of Scotland and the S.E. of Ireland, and consisting for the most part of slaty, gritty, and silicious

beds of immense thickness. A deeper interest attaches to this formation than to any other in the geological scale, on account of its containing the petrified remains of the earliest living inhabitants of our planet. These consist of *Fucoids*, a humble genus of marine plants; of *Corals* and *Graptolites*, which may be ranked as the lowest forms of animal life; of brachyopodous *Molluscs* (lingula and terebratula); and of *Trilobites* (olenus and paradoxides), a remarkable family of crustaceans, peculiar to the Palæozoic period. The most ancient fossils yet known are two species of zoophyte (*Oldhamia antiqua*, and *Oldhamia radiata*), found in the lower Cambrian rocks of county Wicklow.

(2) The *Llandeilo Flags* (so called from a town in Caermarthenshire), consisting of sandstones, slates, and dark-coloured calcareous flags of immense thickness; and containing the first appearance of star-fishes, crinoids, and cystideans, among radiated animals; pteropoda and cephalopoda, among the molluscs; and several new genera of trilobites, among the articulata.

(3) *Caradoc Sandstone* (so named from a mountain in Shropshire, where it is found resting unconformably on the Llandeilo Flags), exhibiting a series of very distinct fossils, among which may be mentioned new genera of corals, crinoids, and molluscs (especially the genus *Pentamerus*).

(4) The *Wenlock Formation* (from Wenlock, a town in Shropshire), consisting of argillaceous shale and concretionary limestone, upwards of 2000 feet in thickness; and abounding with huge concretionary masses of pure carbonate of lime, locally known as "ball-stones." The animal remains consist chiefly of marine molluscs of various orders, of crinoids, trilobites (*phacops*, *calymene*, *homalonotus*, &c.), and corals of curious construction, especially the "chain-coral" (*Halysites catenulatus*).

(5) The *Ludlow Rocks*, an exceedingly interesting formation, from its containing the earliest evidence of the existence of *vertebrated animals* and of *land-plants*. These occur in the uppermost beds of the formation, immediately underlying the Devonian series. The plants are closely allied to the club-mosses (*Lycopodiaceæ*) of the present day; and the animal remains (*Onchus* and *Plectrodus*) belong to the Placoid order of FISHES, an order which to this day continues to be represented by the skate and dog-fish. It is a curious fact, and one deserving special remark, that the first land-plants and the first vertebrated animals are found side by side in the uppermost beds of this formation.

Sir Roderick Murchison has been the principal investigator of all the Silurian formations, which, according to the *Physical Atlas*, contain about 500 fossil species of animals in England and Wales alone. Among these are two species of fish* (*onchus* and *plectrodus*), 48 cephalopoda, 12 pteropoda, 44 gasteropoda, 150 brachyopoda, 64 crustacea (nearly all trilobites), 41 echinodermata, and 67 zoophyta.

3. The Devonian System, or Old Red Sandstone, embraces three formations—the Lower, Middle, and Upper. It receives the name

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* In the new edition of Murchison's *Siluria*, no fewer than twelve species of fish are enumerated.

Devonian from the fact that it is immensely developed in Devonshire and South Wales, where it sometimes attains a thickness of 10,000 feet. The lower formation, according to Miller,[*] occupies large areas in the Orkneys, Caithness, Cromarty, Moray, Banff, and other counties in Scotland, where it abounds in the remains of fishes, which belong to two orders—placoids and ganoids, the latter appearing here for the first time. The middle formation, distinguished by the remains of the *Cephalaspis*, attains great thickness in Fife, Perth, Hereford, and Cumberland; while the third, or upper formation, found near Elgin, at Dura-Den in Fifeshire, and in many parts of England and the Continent, contains numerous remains of another species of ganoid, termed the *Holoptychius*, and the first appearance of REPTILES (*Telerpeton Elginense*). The flora of the system is, for the most part, marine, consisting of *fucoids* and *algæ;* but land-plants are not wholly wanting. The *Lycopodium clavatum*, a species of club-moss, occurs in its lowest fossiliferous beds, and is associated at Cromarty with cone-bearing trees—plants as high in the scale of nature as the pines and cedars of the present day; small ferns and *lepidodendra*, in the middle formation; and the noble fern known as *Cyclopterus Hibernicus*, with a few calamites, distinguish the upper.[†] Including fossils of all kinds, there belonged to the Devonian system, in 1846, no fewer than 275 species, 105 of which were peculiar to itself. In 1856 the number of species had increased to upwards of 300; of which 9 were fishes, 9 crustacea, 37 cephalopoda, 42 gasteropoda, 100 brachyopoda, 14 radiata, and 40 zoophyta.—(*See* the new edition of the *Physical Atlas*, and the admirable monograph of HUGH MILLER, entitled *The Old Red Sandstone*.")

4. The Carboniferous System, so called from the profusion of vegetable matter (*carbon*) which it contains, consists, in like manner, of three formations—viz. the Lower Coal-Measures, or Carboniferous Slates, the Mountain Limestone, and the Upper or true Coal-Measures. Not unfrequently some of the members are wanting, and sometimes beds of one formation alternate with those of another. In Ireland and Scotland, the *Lower Coal-Measures* attain the thickness of several thousand feet, and everywhere present indications of having been chiefly deposited in fresh water, in estuaries, and in inland seas. The *Mountain Limestone*, again, is essentially a marine deposit, and, by the peculiar character of its fossils, forms the most easily recognised formation in the earth's crust. These consist, for the most part, of encrinites, echinoderms, star-fishes, and corals, in numerous varieties; of univalve, bivalve, and chambered shells; of trilobites, which finally cease here; and of sauroid fishes. The minerals of this formation are very valuable, for, besides its building-stones, marble and lime, it yields immense quantities of lead ore. The *Upper Coal-Measures* consist of alternations of sandstone, coals, shales, ironstones, clays, and impure limestones; and, like the carboniferous shales already noticed, are principally of lacustrine origin. The minerals of this formation, especially the coal and iron which it yields, form an inexhaustible source of wealth. Its fauna is not very peculiar, save that INSECTS, apparently allied to the cockroach, beetle, and grasshopper, together with carnivorous arachnidæ (*scorpions*, &c.) and reptiles of the batrachian or lowest order, appear here for the first time. But its flora is the most abundant and gigantic that ever appeared on the earth's surface. The number of plants hitherto discovered in the entire carboniferous system amounts to fully 500, of which 250 species are ferns. In the British Coal-Measures alone there have been enumerated 300 species; and of these, 120 are ferns. Coniferous trees of gigantic stature, huge lepidodendra, calamites, sigillariæ, equiseta, club-mosses, and other allied forms, crowd every bed of shale, and form the materials of which every seam of coal consists.

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[*] Most geologists, including Sir Roderick Murchison, are now of opinion that Miller's lower formation is in reality the middle.

[†] In the autumn of 1858, the author of this manual discovered a large calamite in an Old Red Sandstone quarry of the *Lower Formation* at Rhynie, Aberdeenshire, previously regarded as unfossiliferous. Near it were found curious fern-like markings of great beauty, which Sir Roderick Murchison regards as "*impressions* made on the sand by the pectoral fins of fishes swimming in shallow water."

5. **The Permian System**, so named from its enormous development in the Russian government of Perm, where its strata cover an area of twice the size of France, forms the lower half of what was formerly known as the Saliferous or New Red Sandstone System. It consists principally of two formations—viz. the *Lower Red Sandstone* below, and the *Magnesian Limestone* above, both of which yield excellent building-materials, the latter especially being noted for its durability. The organic remains are neither numerous nor remarkable, but approximate far more closely to those of the Carboniferous System below than to the overlying Triassic. Hence it forms the terminating link of the great PALÆOZOIC SERIES, which extends downwards to the base of the Silurian System. In this entire group the fishes are distinguished by having the *heterocercal* or unequally-lobed tail, whereas in all the systems above the Permian the *homocercal* or equally-lobed tail predominates,—a form which is all but universal in the 8000 species of fishes now existing.

6. **The Triassic System** embraces the upper portion of what was formerly called the Saliferous or New Red Sandstone System. It derives the name *Trias* from the fact that, in Germany and other places where the system is highly developed, it consists of *three* well-defined formations—viz. the *Bunter Sandstein*, the *Muschelkalk*, and the *Keuper Marls*. In England the middle formation is wanting; the lower corresponds to the Bunter Sandstein, and the upper to the Keuper Marls. The last-named formation contains rich deposits of rock-salt, which sometimes attain a thickness of several hundred feet, besides valuable beds of gypsum. The organisms are widely different from those of the Permian and other Palæozoic systems, having nearly all their affinities with the plants and animals of the Oolitic and Cretaceous systems. The flora of the Trias is extremely limited, both in the number of species and of individual forms, especially in the British Isles. A few calamites continue to represent former ages; but the Cycadeæ, which attain such a luxuriance in the Oolite, have not yet made their appearance. The fauna also is comparatively unimportant. Among chambered shells, *ceratites nodosus*, a species of ammonite, is very abundant, and *posidonia*

and *avicula* among the bivalves. Of sauroid fishes numerous species have been discovered; and of reptiles, the bones and footprints of a gigantic batrachian, known as the *Labyrinthodon.* Though the organic remains are not numerous, they are held as marking the dawn of a new geological era, named the Secondary or Mesozoic, which extends upwards to the base of the Tertiary.

7. **The Oolitic System** embraces all the formations that lie between the Triassic and Cretaceous systems. In England, where it is most complete, it consists of three well-marked groups, which, proceeding upwards, are named the Lias, Oolite, and Wealden.

The composition, lamination, and organic contents of the *Lias* clearly indicate that it was deposited in a tranquil, deep sea. In general it consists of dark-coloured argillaceous limestones, bluish clays, and bituminous shales, and is exceedingly rich in fossil plants and animals. Among the former, the cone-bearing genera receive great accessions to their numbers, and approximate more closely to existing forms. *Cycadeæ*—a family of plants allied to the ferns on the one hand, and to the conifers on the other—make their earliest appearance. The fauna embraces no fewer than 170 species of Mollusca, the most characteristic forms being *ammonites*, *belemnites*, *cuttle-fishes*, and *gryphæa incurva*, all of which appear here for the first time. Fishes are numerous and very characteristic, and still comprise both placoids and ganoids. It is quite a store-house of fossil reptiles, of large size and singular formation (*Ichthyosaurus*, *Plesiosaurus*, &c.); and here, indeed, this class of the Vertebrata attains its highest development, though the Ophidia, or serpents, do not appear earlier than the London Clay, a Lower Eocene deposit. But the most remarkable fact in the palæontology of the Lias is that BIRDS here make their first appearance—viz. in the valley of the Connecticut, Massachusetts, formerly supposed to belong to the Permian era. The remains alluded to belong to the order Grallatores (*Wading Birds*), and are allied to the cranes and herons of the present day.

The *Oolitic* or *Jurassic* formation consists of three principal groups, or Lower, Middle, and Upper Oolite. It is more varied in its mineral composition than the Lias, but consists mainly of alternations of Oolitic limestone, calcareous grits, and shelly conglomerates, and, like the Lias, is a strictly marine deposit. Its flora is abundant, comprising cycadeæ, ferns, equisetaceæ, and pines; and here cypresses, yews, dammaras, and thujas, together with liliaceæ and screw-pines, make their earliest appearance. The Brora coal, one of the most considerable Oolitic coal-seams in Europe, seems to have been formed exclusively of *Equisetum columnare.* It is also extremely rich in animal remains, especially in its Radiata, Mollusca, Crustacea, Fishes, Tortoises, and Sauroid Reptiles. Insects greatly abound, and appear to have formed the almost exclusive food of the MAMMALIA, which make their earliest appearance in the Lower or Inferior Oolite. The most ancient representative of this class, so far as yet known, is named *Dromatherium sylvestre*, a marsupial animal, allied to the kangaroo. The Marsupialia (*Pouched Animals*) are regarded as the lowest order of Mammalia, and as forming in some respects a connecting-link between Placental or true Mammals and Birds. Till very recently, no higher order of Mammals was known in strata lower down than the earliest Tertiaries; but in 1857 numerous bones of Placental animals were detected in the Middle Purbeck beds of the Upper Oolite, only a few feet below the Wealden.

The *Wealden* formation (so called from the "wealds" or "wolds" of Sussex and Kent, in which it so extensively occurs) consists of two principal series of strata—the Hastings Sands and the Weald Clay. It is chiefly remarkable as being the only fresh-water formation occurring within the limits of the Secondary or Mesozoic Series. In the counties above-named it appears to occupy the site of an ancient estuary, which received the clay and sand of a gigantic river. Accordingly its fossils are partly fluviatile, and partly terrestrial,—the spoils of the river and the land, not of the sea. Marine species, however, not differing from those of the lower beds of the Cretaceous System, frequently occur in what is supposed to have been the mouth of the estuary. The remains of plants are numerous, resembling in general those of the Oolitic formation. Among the most characteristic forms may be reckoned *Sphenopteris gracilis* (a sort of fern), leaves of Coniferæ and Cycadaceæ, together with silicified Coniferous trees, and fruits resembling those of palms. Altogether, about 70 species have been described as belonging to this formation, all of them belonging to Monocotyledonous orders—that is, plants having no separable bark, no distinct concentric circles, not increasing at their periphery, no medullary rays, and the solidity decreasing inwards.

Its fauna, on the other hand, more closely resembles that of the chalk. The most characteristic forms among its Mollusca belong to genera which at the present day occur in rivers, marshes, and lakes, such as *Unio*, *Cyclas*, *Paludina*, *Neritina*, and *Cypris*. The Articulata comprise numerous species of Insects and Crustacea. The Fishes are of a peculiar character, somewhat resembling the perch, and belong to the placoid and ganoid divisions: among them are several species of *Hybodus* and *Lepidotus*. Reptiles of many genera are found, including Tortoises, Crocodiles, and other Saurians, of which the most remarkable is the *Iguanodon*, a gigantic herbivorous animal, upwards of 70 feet in length, including the tail. *Pterodactyles* also, or flying reptiles, form a striking characteristic of the fauna of the Wealden. Uniting the characters of the bird and reptile, and somewhat resembling the bats of the present day, they were capable of leading an aerial, as well as a terrestrial existence.

Morris and Tennant give 998 species as belonging to the entire Oolitic system as developed in the British Isles, including 3 species of Mammalia, 40 Reptiles, 160 Fishes, 205 Cephalopoda, 103 Gasteropoda, 54 Brachyopoda, 127 Monomyaria, 210 Dimyaria, 12 Insects, 4 Crustacea, 3 Cirrhipedia, 23 Annelida, 41 Echinodermata, 33 Zoophyta, 7 Amorphozoa, and 75 Plants. Since the recent discoveries in the Middle Purbecks, however, the number of Mammals has been considerably increased.

8. **The Cretaceous System**, which derives its name from the chalk (*creta*) that forms the main ingredient in its composition, is the uppermost member of the Secondary or Mesozoic series. It is usually regarded as embracing two well-defined formations—the Greensand and the Chalk, each of which must have been a deep-sea deposit. The flora of the system is not very abundant, and appears to consist, for the most part, of drifted and imperfect fragments. Of its 181 known species of plants, no fewer than 159 are common to it with the underlying Oolitic, Triassic, and Permian systems. The Ferns, Equisetaceæ, and allied forms, so characteristic of lower strata, become here very unfrequent; but the Cycadeæ and Coniferæ are still pretty numerous. But by far the most interesting feature in the flora of the Chalk is the appearance, for the first time, of leaves and other indications of EXOGENOUS, or Dicotyledonous trees, *i.e.* trees having a separable bark, distinct concentric circles, composed of progressive indefinite vascular bundles, increasing at their periphery, the solidity diminishing from the centre towards the circumference, and the pith enclosed in a longitudinal canal or medullary sheath, with cellular prolongations in the form of medullary rays.

The fauna is so rich and varied that no attempt can be made here to describe it in detail. Suffice it to say, that all the types of life are strictly *Mesozoic;* for, of the numerous and often peculiar species found in it, not one has been identified with any organism occurring in the Tertiary strata above. The fossils of the Greensand, or Lower Cretaceous formation, are also, in general, specifically different from those of the Upper, or Chalk. Notwithstanding, however, the great diversity of animal life, little onward progress appears to have been made in the grand march of being, during the deposition of the Cretaceous strata. No reliable evidence of the existence of land mammals in the Cretaceous era has hitherto been found. Bones of seals and cetacea, however, have been detected in the Cretaceous beds of New Jersey. A similar statement may be made respecting Birds; for, excepting some traces in the Oolite, and the occurrence in the Chalk of Maidstone of the bones of a supposed bird (which Owen has named *Cimoliornis Diomedeus*, but which Mr Bowerbank maintains is a pterodactyle), no undoubted vestiges of this class of Vertebrata appear in the wide gap that separates the Lias of Connecticut from the Eocene strata. Reptiles, though still the dominant class, have now passed their meridian, and are visibly reduced in their standing; but turtles, pterodactyles, and oviparous saurians are not unfrequent. Fishes comprise between 30 and 50 species of placoids, between 15 and 20 ganoids, 6 species of CTENOIDS, and 12 species of CYCLOIDS. The last two orders appear in this system for the first time, and are gradually developed in creation until the human period, when they greatly exceeded in number and importance all other fishes. Of the Ctenoid or comb-scaled order, several species of *beryx*—a genus closely allied to the perch—are the most numerous; and of the Cycloid order, composed of fishes whose scales, like those of the salmon, are defined all round by a simple continuous margin, the *Saurocephalus* and *Osmeroides* are those most frequently met with. The remains of Mollusca are extremely numerous, and in the highest state of preservation. The chambered shells—especially certain species of *ammonites*, *scaphites*, *belemnites*, *baculites*, and *turrilites*—present a great contrast to the testacea of the Tertiary and recent periods. The bivalves embrace *Inoceramus* (a genus now extinct), *Pectens*, *Ostrea*, and *Plagiostoma*. The most characteristic species of univalves are *rostellaria*, *cerithium*, *natica*, *dentalium*, and *littorina*. The Articulata comprise several star-fishes, as *goniaster* and *oreaster;* and numerous echinidæ, as *Salenia personata*, *Echinus granulosus*, *Galerites subuculus*, *Galerites cylindricus*, *Nucleolites carinatus*, *Galerites castanea*, and *Micraster cor-anguinum*.

9. **The Tertiary System**, or **Cainozoic Series**, embraces three formations, named respectively the Eocene, Miocene, and Pliocene; or Lower, Middle, and Upper Tertiaries. The Pleistocene, or boulder clay formation, is also generally reckoned as a member of the Tertiary system; but as it is not an ordinary sedimentary deposit, and is for the most part devoid of fossils, we may omit it from present consideration. The remainder consists of vast and varied deposits —fluviatile, lacustrine, marine, and volcanic — all of which are usually found deposited in hollows and depressions of the chalk, but occasionally in those of older rocks. It would appear that during the period of their deposition important changes took place in the relative level of land and sea—that volcanic agency was developed on a vast and magnificent scale—that the portion of Europe now forming the British Isles was the site of enormous lakes, which at the present day have their best analogues in the vast fresh-water lakes of Canada—and that, during the same epoch, a gradual refrigeration of temperature took place in European countries, and such an approximation to their present climate as to admit of the existence of plants and animals similar to, or identical with, those now existing in that part of the world.

On entering the Tertiary strata, the palæontologist finds that organic nature has undergone a vast change; that every plant and animal with which he became acquainted when studying the secondary rocks has passed away, and that he has entered on a wholly different order of things. "With the chalk," says Ansted, "we close as it were one great volume of animated creation. Everything up to this point belongs to the past; everything on this side of it may be ranked among indications of the present." Never before, during the præ-Adamic history of our earth, did so thorough and total a change take place in its fauna and flora; for though that change was very great at the commencement of the secondary era, certain organisms connect that era with the palæozoic; whereas at the commencement of the Tertiary era it is universal, and there are no species common to both series serving to bridge over the chasm which separates them. The flora is especially distinguished from that of the older epochs by the abundance of exogenous or dicotyledonous trees (as oaks, beeches, and elms), some leaves only of which occur in any more ancient system. The monocotyledons, and especially the palms, become greatly more numerous: the cycadeæ disappear from Europe; and the conifers, previously so abundant, no longer occupy a prominent place. In the Eocene formation alone, in which 209 fossil plants have been detected, no fewer than 103 are dicotyledons. One half of the total number of plants belonging to this formation are found in British rocks; but, with one or two exceptions, they are now all extinct species: they are indeed peculiar to this formation, not occurring in either older or newer rocks; and are, in general, of a sub-tropical character. In the Miocene formation the number of fossil plants is 133, of which 78 are dicotyledons, 26 monocotyledons, and 19 coniferæ. One of the most striking features of this vegetation is the abundance of palms—amounting to no fewer than 31 species. Many of the orders are at present represented in tropical countries; others are found in temperate regions; but, with perhaps one exception, all the plants of the Miocene appear to be absent from British rocks, though many of the forms are closely allied to existing species in the United States of America. The Pliocene flora, again, presents 212 species, of which 164 are dicotyledons. The general analogy of this flora is with that of the temperate regions of Europe, North America, and Japan, at the present day. The monocotyledons are rare; the palmaceæ are now absent; while many of the modern North-American genera existed at that time in Europe. Thus North America seems to be at present passing through its later tertiary ages; and the existing plants and trees of the United States, with not a few of its fishes and reptiles, bear, in their forms and construction, the marks of a much greater antiquity than those of Europe.

The fauna of the Tertiary system is even more remarkable than its flora. It was as pre-eminently the age of mammals as of dicotyledonous trees. Only a few vestiges of either occur till we arrive at the Cainozoic era. In the Eocene formation alone—that formation to which the London and Paris basins belong—no fewer than 25 mammaliferous genera have been already discovered, 16 of which have been detected in British strata. All the species, however, and most of the genera, are now extinct. The pachydermata were especially numerous, no fewer than 12 species being found in the Eocene of the British Isles alone; together with 5 cetacea, 1 insectivorous Marsupial, and 1 quadrumanous animal. It was among the pachydermata of the Paris basin that the illustrious Cuvier effected those wonderful restorations which have given such an impetus to palæontological science. Only 1 bird has yet been detected in the British eocene; but it contains 14 reptiles and 97 fishes: from 500 to 600 Molluscs have been found in the London clay alone. Among the more common mammals are the *palæotherium* (4 species), the *anoplotherium* (2 species), *hyracotherium* (2 species), and one species of quadrumana, named *Macacus eocenus*.

The Miocene and Pliocene formations are also replete with mammalian remains, though of a different type from those of the Eocene. The Pachydermata are still the prevailing forms, one of which (*Dinotherium giganteum*) was of monstrous dimensions, and formed a sort of connecting-link between whales and the thick-skinned animals. The *Mastodon*—another gigantic Pachyderm of this period—had tusks and a trunk resembling an elephant. Altogether about 80 genera of mammals occur in these two formations, embracing representatives of all the orders, with the exception of the Marsupialia and Edentata. The former of these had long ere now appeared on the earth, being found as low down as the lias formation, while the latter makes its first appearance in the post-tertiary era. The Carnivora, or flesh-eating animals, appear here for the first time, embracing species of *Hyæna*, *Felis*, *Ursus*, and *Canis*. Fourteen genera of reptiles are also enumerated, including a species of salamander (*Andreas Scheuzeri*), once supposed to be human. Hitherto no reptiles have been discovered in the British strata of these formations; and, with the exception of one species of tortoise and one crocodile, none of them are to be found in the existing fauna of the globe.

The few remains of birds that occur in these formations belong indeed to *genera* now existing, though the *species* appear to be extinct. No fewer than 40 genera of fishes are recorded; but the state of preservation in which they occur is usually so imperfect, and the number of existing species with which they have to be compared is so enormous (above 8000), that Agassiz, the greatest living ichthyologist, finds it impossible to say whether or not *all* the species of these 40 genera have now become extinct; though he has no hesitation in declaring that he has never yet noticed a single case of identity—at least in so far as marine species are concerned. The case is very different, however, in regard to the fossil remains of the numerous *molluscous animals* occurring in the three tertiary formations which we are now considering. Owing to the vast areas over which they are spread, the durable nature of their bony coatings, and other causes, the longevity of species among this class of animals appears to be greater than in any other. Hence a large proportion of the species found in a fossil state in tertiary rocks of all ages continues to survive till the present day. In 1829, Sir Charles Lyell and M. Deshayes of Paris carefully examined 3000 tertiary shells, with the view of ascertaining what proportion of them corresponded with existing testacea; and the result was, that of shells obtained from the Eocene formation about 3½ per cent were identical with species now existing; of those belonging to the Miocene formation about 17 per cent; and of those from the Pliocene formation no fewer than from 35 to 50 per cent were in no respect different from forms now living. Subsequent discovery has, no doubt, considerably modified these results; but the important fact remains that the testacea of the tertiary epoch are largely represented by the shell-fish of our present seas.

The Pleistocene or Boulder Clay.—It would appear that, after the deposition of the Eocene, Miocene, and Pliocene formations, a great change took place in all the higher latitudes of the northern hemisphere in regard to the relative distribution of sea and land; that a large portion of Europe and of the British Isles was gradually submerged beneath the waters, the summits of the loftier mountain-ranges appearing as islands in mid-ocean; that a corresponding elevation of land occurred simultaneously in the Arctic regions, accompanied by a change in the direction of the great ocean-currents, and by a great diminution of temperature over all Northern Europe; that enormous icebergs—laden with gravel, sand, and gigantic boulders—were annually disengaged from the Arctic shores, which, floating southwards, discharged their miscellaneous contents over the recently submerged lands: that this submergence and accompanying change of temperature caused the destruction of by far the greater number of the plants and animals which existed in North Europe in the Miocene and Pliocene ages—their places being supplied, however, to some extent, by the fauna and flora now peculiar to more northern latitudes; that after this state of things had continued for ages, the submerged lands of North Europe and the British Isles were again gradually elevated to their present level; and that, finally, the glacial epoch having passed away, a new flora and fauna, suited to the new conditions, made their appearance—nearly all the species of which continue to exist to the present day.

The organic remains of the boulder clay are by no means numerous. In the British Isles they occur chiefly in the Norwich Crag, Lancashire, North Wales, Isle of Man, the banks of the Clyde, Caithness, and in the north and east of Ireland. On the Continent the main localities are Scandinavia, Russia, and North Germany; while similar deposits are found in Sicily, North America, Patagonia, and Tierra del Fuego.

The Pleistocene beds contain very few recognisable remains of *plants*, but some of the species still exist among our aboriginal trees; as, for example, the Scotch fir and the common birch. Others continue to hold their place in the forests of North-west Europe; as *Abies excelsa*, or the Norwegian spruce, which is found rooted in the Norwich Crag. In general, the Coniferæ alone appear to have flourished during the entire era of the boulder clay. The fossil fauna is more abundant, but consists for the most part of Mollusca; though in the fresh-water beds numerous remains of mammals occur, the greater number of which have become extinct. The total number of marine testacea in the Norwich Crag does not exceed 76 species, of which only one-tenth are extinct; while of the 14 fresh-water species associated with them, all appear to be now living, either in the British seas, the boreal, or the Arctic regions. On the contrary, of 124 species found in the Pleistocene beds of Sicily—where they occur at an elevation of 3000 feet above the sea—it is reckoned that 35 are now extinct; while of the remainder, 5 species no longer inhabit the Mediterranean. No fewer than 37 species of mammals are enumerated by Professor Owen as occurring in the caves of the British Isles; and of these, he says, 18 species have become extinct, while the remaining 19 continue to survive in the British archipelago or on the Continent. The entire fauna of the glacial beds, as given by Dr Edward Forbes in the new edition of the *Physical Atlas* amounts to 170 species. These are chiefly mollusca, but the number includes several birds, and not a few extinct mammals; but the horse, goat, ox, red deer, badger, fox, wildcat, and several other species known to exist in the pliocene era, survived the storms of the pleistocene, and now form a living bridge connecting the present epoch with the immeasurable ages of the past.

8. BOTANY.—Physical Geography does not concern itself with the structure and classification of plants, but confines its attention to their existing number, to the various modes by which they have been disseminated, to the external causes which affect their distribution, and to the more or less limited areas to which the different species and families are confined.

Number of Species.—The number of species presently known to botanists considerably exceeds 100,000; but the progress of discovery is so rapid, and the parts of the earth's surface still uninvestigated so extensive, that 200,000 appears to be a very moderate calculation of the number of species actually existing.

Theophrastus (B.C. 390) knew only 500; Pliny (A.D. 79) increased the number to 1000; the naturalists of the Middle Ages contented themselves with a description of 1400; the celebrated Linnæus, in 1753, swelled the number to 5938, and, in 1762, to 8800; and Wildenow, in 1807, raised this number to 20,000. During the present century the progress of the science has been remarkable. In the year 1820 the number of species in the herbarium of the *Jardin des Plantes*, at Paris, was estimated at 56,000. In 1847 the collection of M. Delessert, of the same city, contained about 86,000 species. In 1844, Steudal, the German botanist, estimated the total number of known forms at 95,000, of which 80,000 are flowering and 15,000 flowerless plants; while at the present moment the number of recognised species does not fall much short of 120,000.

Antiquity of Species.—The geologist can demonstrate that all the species of the existing flora were not created simultaneously, but were introduced at successive stages as the surface and temperature of the earth became fitted for their reception. They are, therefore, of very different degrees of antiquity; for while they all appear to have been denizens of the earth ever since the creation of man, most of them were ushered into being prior to the time in which our existing continents acquired their present configuration; and a very few of them can be traced back to the earliest Tertiary ages. Those species are reckoned the oldest which combine simplicity of organisation with great width of distribution: as our common grasses and rushes, together with mosses, lichens, fungi, and ferns; while those that are confined to small areas, notwithstanding the continuity of land having a suitable climate, and their being endowed with the requisite means of transport, are considered the most recent.

Centres of Creation.—Most people seem to be of opinion that all, or nearly all, the plants found in any particular locality, were originally created there. The great Swedish botanist, on the other hand, believed that the progenitors of all the existing plants were created in some one particular region, from which they were gradually disseminated over the earth's surface. Innumerable facts can be adduced by modern science to show that each of these hypotheses is equally untenable; and most naturalists are now of opinion that there were numerous *specific centres*, situated in numerous and widely separated localities, each centre being the birthplace of one species, or assemblage of species, which continues to grow there in greater perfection than in any other region to which, by the various transporting agents known to exist, it was subsequently wafted.

Modes of Dissemination.—Many plants are possessed of means by which they can diffuse themselves over areas more or less extensive. Some have seeds with winged or feathery appendages, which enable them to float on the air; other seeds are so small as to be borne by winds to very distant localities; very many are transported by rivers, streams, marine currents, and even icebergs, to very remote regions, where, if the soil and climate be suitable, they take root and propagate their species; while not a few adhere to the hairy coatings of migratory animals, or, entering into the gizzards of birds of passage, retain their vitality after being voided by them in distant localities. The agency of man has also, in all ages, been very effectual in the dissemination of plants; for example, the passage of armies from one country to another, commerce by sea with foreign nations, the discovery of previously unknown lands, and the planting of colonies in distant regions. But all these agencies, singly or combined, cannot adequately account for the present distribution of the species, without supposing a multiplicity of original specific centres.

Areas of Distribution.—In whatever way the vegetation of the globe was originally disseminated, its present distribution is such that the individual species are confined to particular portions of the surface, characterised by a certain temperature and other climatic conditions. The area within which a given plant prevails is called its *habitation*, or *area of distribution*. In or near the centre of this area it attains its highest development; it degenerates when far removed from this centre; and when transported beyond the limits of the area it languishes and dies. Though each species of plant has a nature peculiar to itself, the soil, temperature, and climatic conditions of the various portions of the earth's surface are so various, that each species finds for itself a perfectly suitable habitation. These habitations, or areas of distribution, are of all sizes; embracing in some cases a large section of a continent, or of several continents, and being limited in others to the merest speck of land. For example, a considerable number of plants of Northern Europe occurs also in Siberia and British North-America; some British species are found at high elevations on the Himalaya Mountains; and one species—the *Epilobium telargonum*—is common to Britain, Canada, and Tierra del Fuego. On the other hand, the Cape of Good Hope, California, and certain regions of the Andes, have respectively certain species peculiar to themselves; as also Madeira, the Canaries, St Helena, the Sandwich and Society Islands, &c.

The same species of plant seldom occurs in widely separated countries, however closely the soil and climate of both may approximate; but similar species of the same genus are, in such circumstances, rarely absent, and these are spoken of by botanists as *representative species*. Thus the heaths of Europe are represented by other species of the genus *Erica* in S. Africa; and the violets of North America represent those of Britain, which are specifically different.

Schouw's Phyto-geographic Regions.—Various attempts have been made by botanists to divide the globe into certain well-defined *regions*, founded on their characteristic vegetation. Wildenow, Decandolle, Meyen, and especially Schouw, have distinguished themselves in this department of science. The last-named naturalist, about twenty years ago, proposed to divide the earth's surface into what he calls "Phyto-geographic regions." These are 25 in number, and characterised as follows: 1. At least one-half of the *species* found in each region must be peculiar to it. 2. One-fourth of the *genera* must be peculiar to it, or at least be more prevalent there than elsewhere. 3. Some of the *orders* must either be peculiar to it, or reach their maximum in it.

The regions are further divided into *provinces*, according to minor differences in the vegetation; one-fourth of the species and some of the genera being sufficient to form a province.

Each of the different regions receives three separate designations: the *first* indicating its botanical character; the *second* its geographical position; while the *third* is named after some eminent botanist. At present we can do little more than define these regions; but fuller details will be found under the countries indicated by the *geographical* designations.

1. *Region of Mosses and Saxifrages*, the Arctic-Alpine flora, or Wahlenberg's region; embracing all the countries situated within the Arctic Circle, together with the higher elevations of the mountain-ranges of W. and S. Europe.—(*See under* "Europe," *art.* "Botany").

2. *Region of Umbelliferæ and Cruciferæ*, North-European and North-Asiatic, or Linnæus's region; embracing that large portion of the area of the Old World which lies between the Polar Circle and lat. 45° N., and between the Atlantic and Pacific Oceans.—(*See under* "Europe").

3. *Region of Labiatæ and Caryophyllaceæ*, Mediterranean flora, or Decandolle's region; embracing Southern Europe, Asia Minor, Syria, N. Africa, Madeira, Azores, and Canaries.—(*See under* "Europe").

4. *Region of Asters and Solidagos*, Northern North-American or Michaux's region; extending from the Atlantic to the Rocky Mountains, and from lat. 35° N. to Lake Winnipeg and St James Bay. It embraces the greater part of Canada and the N.E. part of the United States.—(*See under these countries*).

5. *Region of Magnolias*, the S.E. North-American flora, or Pursh's region; comprising the remainder of the United States lying E. of the Rocky Mountains.

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6. *Region of Camelliaceæ and Celastraceæ,* the Chino-Japanese, or Kämpfer's region; embracing Japan, Corea, and the N.E. part of China.

7. *Region of Scitamineæ and Zingiberaceæ,* the Indian flora, or Roxburgh's region; embracing Hindostan, Further India, and the S. of China.—(*See under* "Hindostan").

8. *Region of Rhododendron trees,* the Emodic, or Wallich's region; comprising the flora of the S. slopes of the Himalaya, from the altitude of 5000 to 12,000 feet. It includes Sirmore, Gurwal, Kumaon, Nepaul, and Bhotan.—(*See under* "Hindostan" *and* "China").

9. *The Malaysian flora,* or Reinwardt's region; embracing Northern Australia and the Malay Archipelago, with the exception of Sumatra, Java, and the S. of Borneo.

10. *Javanese flora,* or Blume's region; embracing Java, Sumatra, Timor, and the S. of Borneo.

11. *Oceanic* or *Polynesian flora,* or Chamisso's region; embracing all the islands of the Pacific Ocean within the Tropics.

12. *Region of Balsamic trees,* Arabian or Forskal's region; embracing the S.W. of Arabia, the E. of Abyssinia, S. of Persia, Beloochistan, and Sinde.

13. *The Desert,* or Delile's region; comprising the Sahara, and all Arabia except the S.W. angle.—(*See under these regions*).

14. *Region of Tropical Africa,* or Adanson's region; embracing the whole of Africa between the Tropic of Capricorn and the 15th deg. of N. latitude, with the exception of Eastern Abyssinia. It also includes Madagascar.

15. *Region of Cactaceæ and Piperaceæ,* Mexican or Jacquin's region; includes Mexico, Central America, New Granada, Ecuador, Peru, Venezuela, Guinea, and the N. of Brazil, with the exception of the higher elevations of the mountain-chains.

16. *Region of the Highlands of Mexico,* or Bonpland's region; those parts of Mexico and Central America which have an elevation of more than 5000 feet.

17. *Region of Cinchonæ, or medicinal herbs,* the Andes, or Humboldt's region; embracing the elevated regions of the Andes, from 5000 to 9000 feet high, and extending southward to the Tropic of Capricorn.

18. *Region of Escalloniæ and Calceolariæ,* or Ruiz and Pavon's region, embraces the highest elevations of the last-mentioned range, or above 9000 feet.

19. *The West Indian flora,* or Swartz's region; embracing all the islands of the West Indies.

20. *Region of Palms and Melastomaceæ,* Brazilian or Martius's region; embracing all South America between the Andes and the Atlantic, and between the Tropic of Capricorn and the 15th region.

21. *Region of Arborescent Compositæ,* Extra-tropical South American, or St Hilaire's region; embraces South America between the Tropic of Capricorn and Patagonia.

22. *Patagonian* or *Antarctic Region,* d'Urville's region; embraces Patagonia, Tierra del Fuego, and the Falkland Isles.

23. *Region of Stapeliæ and Mesembryanthema,* South African, or Thunberg's region; including the whole of Africa S. of the Tropic of Capricorn.

24. *Region of Eucalypti and Epacridaceæ,* Australian or Brown's region; includes Southern Australia and Tasmania.

25. *Region of New Zealand,* or Forster's region; embracing the islands of New Zealand.

9. ZOOLOGY.—Zoological Geography is closely allied to Botanical Geography, being that branch of the science which treats of the habitats, limits of distribution, and dispersion of animals, as they at present exist on the globe.

Number of Animals.—The barriers in the way of obtaining accurate statistics of the number of animal species are even greater than in the case of plants; and naturalists accordingly vary greatly in their estimates, not only of the probable number presently existing, but also of the known and described species. This statement need not excite surprise when we consider that many regions of the globe remain almost wholly unknown, while others have been but imperfectly explored; that whilst the habitat of plants, when once discovered, can be visited and revisited by the botanist at pleasure, the great majority of animals are endowed with the powers of locomotion, and evade the pursuit of man; that myriads of species are too minute to be seen by the naked eye, while others are too fleet or too formidable for being accurately observed; that age and sex produce such changes in their appearance as often to render it doubtful whether or not the species are identical; that many of them have their home in the depths of the ocean, or conceal themselves in the sand on the sea-shore; while others seek shelter in the impenetrable recesses of the forest, or in inaccessible mountain-cliffs.

The number of known species of Vertebrated Animals (including Mammals, Birds, Reptiles, and Fishes), as given by different naturalists at various dates, will be found in the following Table:—

NUMBER OF KNOWN SPECIES OF VERTEBRATED ANIMALS.

Classes of Vertebrata.	Keferstein in 1834.	Swainson in 1840.	Wagner and Waterhouse in 1846-48.	Physical Atlas, 1856.
Mammalia (Mammals),	883	1,000	1,967	1,704
Aves (Birds), ...	4,099	6,000	8,000	6,226
Reptilia (Reptiles), . .	1,270	1,000 (?)	1,600	657
Pisces (Fishes), . . .	3,586	6,000	8,000	8,000
Total, . . .	9,838	14,000	19,567	16,587

The probable number of existing vertebrata may therefore be estimated at about 20,000. The other divisions of the Animal Kingdom are far more uncertain. Thus, while Woodward, writing in 1851, gives the number of recent Mollusca at 12,000, and the fossil species at 15,000, others maintain that no fewer than 20,000 recent species are to be found in certain existing collections. Keferstein (in 1834) assigns 1003 as the number of known species of Radiata, including the Polypi, Entozoa, Acalepha, and Echinodermata; while Swainson, in 1840, gives the number at 2500. But by far the greatest discrepancy prevails in regard to the Articulata (embracing Annellida, Crustacea, Arachnides, and Insecta), some authors stating the number at 120,000, others at 400,000, and some even as high as 550,000, the great majority of which are Insects. Besides these, there exist innumerable hosts of Infusoria or Animalcules, a class of microscopic animals belonging to the sub-kingdom Radiata, and found in countless numbers in vegetable infusions. Omitting from our reckoning the Insects and Infusoria, of the actual number of which we can form no probable estimate in the present state of science, the following may be taken as a tolerable approximation to the existing number of animals:—Vertebrata, 20,000; Mollusca, 20,000; Radiata, 5000; Articulata, 5000—total, 50,000 species.

M. Agassiz, one of the most eminent of living naturalists, estimates the total number of *known species*, including insects, at 250,000.

Distribution of Animals.—Though animals are endowed with the power of voluntary motion, and are therefore more capable than plants of transporting themselves from one region to another, various causes combine to limit the actual extension of individual species. Difference of climate, and the greater or less facility of procuring subsistence, are amongst the foremost of those causes; while in regard to land animals, arms of the sea and elevated mountain-chains present formidable barriers to migration. In numerous instances, however, we can trace the operation to no secondary cause, and little can be advanced beyond conjecture as to the way and manner in which a large proportion of the species came to be located in the precise regions where they are found to occur; unless, as in the case of plants, we feel ourselves compelled to assent to the doctrine of numerous *centres of creation.*—(*See* p. 54.) In no other way can science satisfactorily resolve the question how quadrupeds, for example, and other animals incapable of crossing arms of the sea, have found their way to islands situated in mid-ocean; whilst in regions very remote from each other, but having a similar climate, the species, instead of being identical, are merely analogous.

Zoological Kingdoms.—Naturalists not only divide the surface of the globe into twenty-five botanical regions, but also into *six zoological kingdoms*, which are subdivided into *fourteen zoological provinces*. Approximately, the six kingdoms correspond respectively with the six continents of the globe—viz. Europe, Asia, Africa, North America, South America, and Oceania. North and South America are indeed usually comprised under one kingdom, thus reducing the number of kingdoms to five; but simplicity of arrangement, and the convenience of the student, render the other division preferable.

The first, or EUROPEAN KINGDOM, embraces the whole of Insular Europe, and is subdivided into three zoological provinces—viz. *Arctic, Central,* and *Southern Europe.* The second, or ASIATIC KINGDOM, in-

cludes continental Asia with the exception of Arabia, extends from the Urals and the Volga to the Pacific, and embraces four provinces—viz. *Arctic*, *Central*, and *Tropical* Asia, together with Asia Minor and Syria, which last is designated the *Transition Province*, as its fauna combines the characteristics of Asia, Europe, and Africa. The third, or AFRICAN KINGDOM, consists of but one province, which embraces the entire continent of Africa, together with Arabia, Madagascar, Bourbon, and Mauritius. The OCEANIC or AUSTRALIAN KINGDOM embraces the whole of Oceania, and is subdivided into two provinces — viz. the *Malaysian*, which forms a connecting-link between the Asiatic and Australian kingdoms; and the *Melanesian* province, whose fauna is of a very peculiar character. The fifth, or NORTH-AMERICAN KINGDOM, embraces the whole of that continent north of the Mexican States, and contains two provinces, the first of which comprehends Russian, British, and Danish America, and the second the United States. The sixth, or SOUTH-AMERICAN KINGDOM, embraces not only the whole South-American continent, but also Mexico, Central America, and the West Indies. It consists of two provinces of very unequal dimensions—viz. *Tropical America*, which extends from the Rio del Norte and the head of the Gulf of California, on the N., to lat. 40° S.; and *Austral America*, embracing Patagonia, Tierra del Fuego, and the Falkland Isles.*

The following Table,† which is adapted with modifications from Milner's Universal Geography, exhibits the distribution of the several orders of Mammalia in the six zoological kingdoms:—

DISTRIBUTION OF THE MAMMALIA.

Orders of Mammalia.	Total No. of species.		Europe.		Asia.		Africa.		North America.		Central and South America.		Oceania.	
	Phy. Atlas.	Wagner and Water.	No. of Species.	Pec. Species.	No. of Species.	Pec. Species.	No. of Species.	Pec. Species.	No. of Species.	Pec. Species.	No. of Species.	Pec. Species.	No. of Species.	Pec. Species.
Quadrumana	170	186	1	—	49	49	63	62	—	—	74	74	—	—
Carnivora . .	514	731	64	20	276	224	174	151	101	88	188	180	8	8
Marsupialia .	123	140	—	—	4	4	—	—	4	3	28	27	105	105
Rodentia . .	604	604	61	21	185	126	104	94	118	113	166	161	21	19
Edentata . .	28	34	—	—	5	5	6	6	1	1	20	19	3	3
Pachydermata	39	38	1	—	17	16	18	17	—	—	4	4	—	—
Ruminantia .	151	159	14	7	67	59	65	62	13	9	13	12	—	—
Cetacea . .	75	75	24	7	29	9	16	7	24	4	25	14	13	3
Total No. of species .	1704	1967	165	55	632	492	446	399	260	218	518	491	150	138

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* For fuller details regarding the limits and characteristics of these provinces, we must refer the student to the zoological sections of this work, under the six continental divisions of the globe.

† The *first* column of figures shows the total number of species belonging to each order, according to Johnston's *Physical Atlas*; the *second*, the total number, according to Wagner and Waterhouse, on whose statistics the whole remainder of the table is based; while the second division of the other columns shows the number of species that are peculiar to each zoological kingdom.

10. ETHNOGRAPHY.—Man, from the perfection and beauty of his bodily organisation, and from the order of time in which he was called into existence, occupies the apex of the vast pyramid of animal life. Of all animals he only walks erect, his eye reflecting earth and sky, and his look glancing freely over that world in the midst of which he lives and reigns. Over his whole form there is an air of more than material beauty, the reflection of a soul infinitely rich in thought and emotion; while by possessing an immortal spirit he is raised immeasurably above material things, and separated, as by an impassable gulf, from all other animals. In common with these, he is, to some extent, subject to the influence of external circumstances, though in a less degree than any other species. His superior intelligence and the pliancy of his constitution fit him to become the denizen of all countries, and all varieties of climate, from the scorching heat of the tropics to the rigorous cold of Arctic latitudes. His geographical distribution, accordingly, differs from that of all other organic beings, and man is the only true cosmopolite. Of the vast number of countries brought to the knowledge of Europeans by modern discovery, very few were found uninhabited; the principal exceptions being Iceland, Spitzbergen, and Novaia Zemlia; Madeira, the Azores, and St Helena; the Falkland Isles, the Galapagos, some minor groups in Polynesia, and the inhospitable regions around the South Pole.

Unity of the Species.—Man is of only one species, and the so-called *races* of men are mere varieties of the same species, differing less from each other than do the varieties of many other animals; as, for example, the dog, the horse, the sheep, and the domestic fowl. Science and Revelation alike proclaim this fundamental truth: the one, by establishing an identity of anatomical structure between the races, the same period of gestation, the same instincts, longevity, and diseases, the same mental and moral character, and the fertility of offspring arising from intermixture of blood; and the other, by declaring that in one man was the germ of the whole human family; that the myriads of men that now people the earth, after the lapse of a hundred and fifty generations, are all *brethren*, united together by the closest ties; and that the universal depravity and death which have their root in the common ancestor of all, are more than counterbalanced by the obedience and sufferings of his glorious Descendant, whom every human being can claim as his near kinsman.

Origin of Races.—Yet in all ages and countries the individuals of the human family have presented numberless diversities of appearance; and though all are specifically identical, every member of the family exhibits his own proper *individuality*,—that is to say, certain characteristics of physical organisation, and of mental disposition

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that distinguish him from every other individual of the species. For Man is a complex being, and embraces within him a world of diverse elements, that rival, in their various riches, the world of external nature. These elements are capable of combination in infinitely varied proportions. In one the soul predominates, in another the body; here the nervous system bears rule, there the arterial; here the affections, there the understanding. The laws and the causes, however, that determine these combinations are to us a secret; for individuality is a mystery of life, the stamp of the Creator. This much, however, seems certain—viz. that, while the distinctive character of the soul never fails to manifest itself very perceptibly in the entire physical organisation,—especially in the form of the head and in the physiognomy,—the influence of external nature, of the family, of society, of habit, and of education, is but of secondary importance, tending merely to modify the original individuality. Yet, by a constant and unvarying repetition, carried on through a long series of generations, even the latter influences may produce very important effects; though never to the extent of eradicating the outlines of this individuality, which, notwithstanding the constant intermingling of blood by marriage, perpetuates itself for ages, from father to son, in the same family, every member of which resembles, both in temperament and physical organisation, some one or other of his ancestors or blood relations.

Accordingly we find that, from the earliest dawn of history, mankind has been divided into races, and organised into nations; and it is one of the first lessons of Revelation that with this division human design and human choice had nothing whatever to do,—that it was exclusively the work of the Creator, with nature to aid in its accomplishment,—and that these races and nations were distributed over the earth's surface according to a definite plan, in which each had assigned to it its proper part in the progress of events. Each region, moreover, strengthened and modified the character of the race that was conducted into it; and thus national characteristics, which became more and more marked as generations succeeded each other, attained at length such a degree of fixedness and inflexibility as has enabled them to traverse the ages of history, and encounter the most opposite influences, without undergoing any radical change.

Dispersion of Nations.—The precise locality in which the dispersion of nations originated, and the precise date at which it took place, cannot now be determined; but there can be no doubt that we must look for the former to Western Asia, and for the latter to the second or third century after the deluge. Asiatic Turkey, situated in the centre of the Old World, and midway between its four great oceans, has been twice the cradle of mankind, and still remains the region in which the human form attains its highest perfection. Here Noah with his family, the sole survivor of that great catastrophe which swept away the inhabitants of the antediluvian world, took up his destined abode; and here his three sons—Shem, Ham, and Japheth—like branches cut from the same tree, took root and flourished, containing within themselves the germs of the three great races, and of all the minor varieties, that subsequently peopled the earth. The distinctive characteristics of the ancestors were indelibly impressed on their respective descendants: thus spiritual and religious tendencies predominated in the offspring of Shem; the sensual and corporeal in those of Ham; while the nations that sprung from Japheth have been no less remarkable for their fuller development of all the powers of the mind. Accordingly, when the set time for the great dispersion arrived, Ham and Japheth wandered far from the ancestral home, in quest of abodes congenial to their respective natures; while Shem retained possession of the paternal altars, became the custodier of the one true faith, and the ancestor of that promised Seed of the Woman in whom all nations of the earth shall yet be blessed.

Regarding this distribution from another point of view, we observe a curious and remarkable anomaly; for while all the other types of animals, as also of plants, go on decreasing in perfection from the equator to the poles, man presents to our view his most perfect type at the centre of the North Temperate Zone, in that region of the Caucasus above alluded to; whereas, departing from that region, whether to the north, south, or east, the types gradually lose their symmetry, till at the remote extremities of the continents we find the most deformed and degenerate races.

Number and Characteristics of Races.—Modern Ethnography classifies the numerous nations that people the globe into three primary races—viz. the Caucasian, or white and bearded race; the Mongolian, or tawny and beardless race; and the Negro, or black-skinned and woolly-haired race. These are confined to the Old World, and correspond, with certain limitations, to its three continental divisions; the Caucasians occupying nearly all Europe, south-western Asia, and the north of Africa, and extending from Iceland and the Atlantic to the Ganges and Brahmapootra, and from the Arctic Circle to the Tropic of Capricorn; the Mongolians peopling all the rest of Asia, together with certain isolated localities in central and northern Europe; and the Negro race, the whole of continental Africa south of the Tropic of Cancer.

In addition to these there are several minor varieties, inhabiting Oceania and the New World, and probably originating in the intermixtures and modifications of the three primary races; as the Malayans in Malaysia and Madagascar; the Papuans in New Guinea and New Hebrides; the Maoris or Australians in Australia; and the Americans, or aboriginal inhabitants of North and South America. The more prominent characteristics of the different races are the following:—

CAUCASIAN RACE.—The head almost round, or somewhat oblong; skull symmetrical, of great capacity, and high facial angle; face oval, and the features moderately prominent; the forehead arched; the nose narrow, and the bridge somewhat convex; the mouth small, with the lips slightly turned out (especially the lower one), and the outlines grace-fully waved; the front teeth placed perpendicularly in the jaws; the chin full and round; skin fair and ruddy, or of different shades of brown; hair abundant on head and chin, but dispersed thinly over other parts of the body; colour various, according to complexion, from a yellow-red auburn and deep brown to glossy black; eyes blue or hazel to dark brown and black; stature of medium size, approaching 6 feet in the fair varieties, but several inches less in the dark. Muscular strength great; intellect highly developed; and languages polysyllabic, copious, and highly inflexional. This type is divided into two branches, the *Indo-European* or Japhetic branch, and the *Syro-Arabian* or Semitic branch. For a fuller description of these we refer the student to the ethnographical sections of Europe and Asia.

MONGOLIAN RACE.—Head of a heavy form, though not large; skull square-shaped, rather angular than rounded, its capacity much smaller than the Caucasian, with the facial angle sloping backward; face broad and flattened, cheek-bones projecting, nose flat, space between the eyes flat and very broad; chin prominent; lips well-formed; eyes small, dark, and placed obliquely; skin of an olive tint, never very fair or intensely swarthy; hair coarse, lank, and black; the beard scanty, not curly, and wanting at the ears; hair scanty on other parts of the skin; stature somewhat low, trunk long, and the extremities rather short. Strength and endurance less than in the Caucasian; intellect moderately developed, but shrewd, sagacious, crafty, and insincere; more obstinate than brave, and extremely cruel to vanquished foes; imagination and taste deficient; imitative and skilful in the domestic arts, but without any scientific enterprise; content with a stationary civilisation; fond of horseback, sluggish, and dirty. Languages inartificial, limited in range of literature, and divided into two principal families—the *Monosyllabic*, which is destitute of inflexions, and the *Finno-Tartarian*, which is slightly inflexional and phonetic. Religious aspirations obtuse, the forms being various, as Buddhism, Shamanism, Polytheism, and Mohammedanism.

NEGRO OR ETHIOPIAN RACE.—Skull thick and heavy, compressed at the sides, and elongated from front to back; the forehead convex, retreating, and narrow, with facial angle lower than in the Mongolian type; cheek-bones projecting forward; both jaws much elongated, with the front teeth of the upper turned obliquely forward; mouth wide, and lips very thick; the chin retracted; eyes black and prominent; skin varying from a deep sallow to intense black, and emitting a strong, offensive odour, but soft and silky to the touch; hair of a crisp, woolly texture, and curly on the head, generally destitute on other parts of the body; beard scanty on the upper lip, and chiefly confined to the chin. Body strong, muscular, and often very symmetrical; the arms somewhat elongated; feet broad, heavy, and flat-soled. Intellect without depth or comprehensiveness, but acute and perceptive; patient, submissive, affectionate, honest, cheerful, and contented; well adapted for all domestic and agricultural employments, but do not excel in arts, navigation, or commerce, and have never arrived at a high civilisation. Languages agglutinate, slightly inflexional, but one stage removed from the simplest monosyllabic, and without a written literature. Religion fetichism or demon-worship, but Mohammedanism among the northern tribes; in a civilised state, however, they are susceptible of deep devotional feelings.*

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* For a description of the sub-varieties above enumerated, the student is referred to the Sections of this work treating of America and Oceania.

Population of the Globe.—The population of the entire globe cannot, as yet, be stated with any great degree of accuracy; but probably *one thousand millions* is not far from the truth. Of these the Caucasian race numbers about 400,000,000; the Mongolian, about 470,000,000; the Negro, including the Papuan and Australian sub-varieties, about 80,000,000; the Malay, about 40,000,000; and the American, about 10,000,000.

The population of the different *continents*, according to the most recent statistics, is as follows:—

Europe, ...	265,417,785
Asia, ...	652,500,000
Africa, ...	60,000,000
N. America, including Central, .	39,681,230
S. America, ...	18,447,312
Oceania, ...	21,000,000
	1,057,046,327

PART III.

POLITICAL GEOGRAPHY.

EUROPE.

1. **Boundaries.**—North, the Arctic Ocean; West, the Atlantic; South, the Strait of Gibraltar, the Mediterranean, Sea of Marmora, Black Sea, and Mount Caucasus; East, the Caspian Sea, the River Ural, the Ural Mountains, and ~~the River~~ Kara.

Continental Europe lies between the parallels of 36° 1′ and 71° 5′ N., and between the meridians of 9° 32′ W., and 60° 50′ E.; it occupies 35° 4′ of lat. and 70° 22′ of lon., and with the exception of Lapland and part of the government of Arkhangel, is wholly included within the north temperate zone. But insular Europe, including Iceland, Spitzbergen, the Azores, Candia, &c., embraces a much larger area—viz., from lat. 34° 55′ (Candia) to 80° 48′ (Spitzbergen), and from lon. 31° 16′ W. (Azores) to 60° 50′ E. (Ural Mountains),—being in all 45° 53′ of lat. and 92° 6′ of lon.

Grodno, in Russia, in the centre of the continent, is nearly in the same latitude as the centre of Ireland, the south of Labrador, the north of Lake Winnipeg, and Queen Charlotte Island, and as Tula, Uralsk, and the middle of Lake Baikal; and nearly in the same longitude as Hammerfest, Tornea, Riga, Lemberg, Klausenburg, Athens, and the east side of Tripoli and Cape Colony. The south-east corner of Sweden is the centre of insular Europe.

2. **Form, Dimensions, and Extreme Points.**—Europe is an immense peninsula jutting out from Western Asia, and broken up into a great number of smaller peninsulas, the principal of which are:—The Scandinavian, between the Baltic and Atlantic; the Danish, between the Baltic and North Sea; Brittany, between the English Channel and Bay of Biscay; the Spanish, between the Atlantic and Mediterranean; the Italian, between the Adriatic and Tyrrhenian Sea; the Hellenic Peninsula and the Morea, between the Adriatic and the Ægean and Black seas.

All these, with the single exception of the Danish, stretch out in a southerly direction, and have mountain-ranges occupying their entire length. This remarkable law holds good with almost all the peninsulas of the globe.

The extreme length of Europe, from Cape St Vincent in Portugal to Orsk in the Ural Mountains, is 3400 miles; extreme breadth, from North Cape in Lapland to Cape Matapan in Greece, 2450 miles. Cape Nordkyn in Norway is the most northern point of the continent; Punta da Tarifa, near Gibraltar, the most southern; Cabo da Roca, in Portugal, the most western; and the Urals, in Perm, the most eastern.

3. **Coast Line.**—Owing to its peculiar form and numerous deep indentations, the coast line greatly exceeds in proportion that of every other continent. It is estimated at 17,000 miles, being one mile of coast to every 220 miles of surface; while Asia has only one to every 550 miles; Africa, one to every 710; and America, one to every 490. It is in a great measure owing to this peculiarity of surrendering herself to the ocean that Europe owes her high civilisation and unrivalled commercial prosperity.

4. **Area,** 3,805,800 square miles, including the islands. If we reckon the area of Oceanica at 4,500,000 square miles, Europe is the smallest of the six great divisions of the globe; occupying only $\frac{1}{14}$ of its land surface, or $\frac{1}{52}$ of its entire area. It is forty-two times the size of Great Britain—while Russia occupies more than a half of its area.

5. **Population,** 265,417,785, according to the latest edition of the *Physical Atlas*, published in 1856-7. It is greatly more populous than any other continent, having 70 inhabitants for each square mile, and comprises about one-fourth of the population of the globe.

6. **Political Divisions.**—Europe contains 80 independent States, of which 30 belong to Germany, and 25 to Switzerland. There are 4 Empires, 16 Kingdoms (including the Papal States), 1 Electorate, 6 Grand-Duchies, 10 Duchies, 9 Principalities, 1 Landgraviate, and 33 Republics.

Great Britain, France, Austria, Russia, and Prussia, are called the five Great Powers, because they exercise a decided influence on the policy of their neighbours; those of the second rank are Sweden, the Netherlands, Spain, and Turkey; those of the third, Belgium, Denmark, Portugal, Sardinia, Naples, Saxony, Bavaria, and Switzerland; the smaller States of Germany and Italy are dependent on the larger ones, and in many cases owe their existence to the mutual jealousies of their more powerful neighbours. In the following table we omit for the sake of brevity all the Swiss Republics, together with 20 of the smaller German States, and refer the student to the complete lists given under these countries.

TABLE OF EUROPEAN STATES.

Name and Position.	Area in Eng. Square Miles.	Population according to the latest Census.	Capital.	River, &c. on which the Capital stands.	Population of Capital.
The British Isles, or United Kingdom, } W. of the Continent of Europe,	122,550	27,637,761	London	Thames	2,362,236
Portugal, in the extreme S. W. of the Continent of Europe,	35,268	3,499,121	Lisbon	Tagus	280,000
Spain, E. of Portugal,	176,955	15,807,753	Madrid	Manzanares	301,660
France, N.E. of Spain,	207,232	36,039,364	Paris	Seine	1,178,262
Belgium, N. of France,	11,313	4,529,461	Brussels	Senne	260,659
Netherlands, N. of Belgium,	13,616	3,523,823	Amsterdam	Amstel	260,037
Denmark, N.E. of Netherlands,	60,500	2,468,713	Copenhagen	The Sound	143,591
Hanover, S. of Denmark,	14,846	1,819,777	Hanover	Leine	42,000
Oldenburg, enclosed by Hanover,	2,421	287,163	Oldenburg	Hunte	8,000
Mecklenburg-Schwerin, E. of Hanover,	4,845	539,231	Schwerin	Stör	20,000
Hesse-Cassel, S. of Hanover,	4,439	755,350	Cassel	Fulda	32,000
Hesse-Darmstadt, S.W. of Hesse-Cassel,	3,761	836,424	Darmstadt	Darm	27,000
Nassau, W. of Hesse-Darmstadt,	1,751	434,064	Wiesbaden	Salzbach	12,000
Baden, S. of Hesse-Darmstadt,	5,904	1,314,837	Carlsruhe	Rhine	25,160
Würtemberg, E. of Baden,	7,658	1,788,720	Stuttgart	Nesenbach	46,507
Bavaria, E. of Würtemberg,	29,637	4,541,556	Munich	Isar	132,112
Saxony, N.E. of Bavaria,	5,770	2,039,075	Dresden	Elbe	108,732
Prussia, N.E. of Saxony,	108,410	17,202,831	Berlin	Spree	426,602
Austria, S. of Prussia,	257,830	39,411,309	Vienna	Danube	579,457
Switzerland, W. of Austria,	15,261	2,392,740	Berne	Aar	26,340
Sardinia, S. of Switzerland,	29,167	5,167,542	Turin	Po	179,635
Parma, E. of Sardinia,	2,760	499,835	Parma	Parma	41,000
Modena, E. of Parma,	2,317	604,512	Modena	Secchia	29,000
Tuscany, S.E. of Modena,	8,983	1,793,967	Florence	Arno	114,041
Pontifical States, E. of Tuscany,	17,494	3,126,263	Rome	Tiber	179,952
Naples, or the Two Sicilies, S.E. of Pontifical States,	43,175	9,117,050	Naples	Bay of Naples	413,920
Greece, S.E. of Naples,	15,237	1,045,232	Athens	Gulf of Egina	31,125
Turkey, N. of Greece,	203,628	15,500,000	Constantinople	Bosphorus	500,000
Russia, N.E. of Turkey,	2,090,000	60,362,000	St Petersburg	Neva	532,000
Sweden, N.W. of Russia,	170,096	3,641,600	Stockholm	Lake Mælar	100,000
Norway, W. of Sweden,	121,807	1,433,488	Christiania	Chris^{a}. Fiord	38,958

7. **Isthmuses.**—Isthmus of Corinth, connecting the Morea with Northern Greece; Isthmus of Perekop, connecting the Crimea with the mainland of Russia. The other isthmuses, though numerous, have no distinctive names.

8. **Capes.**—Owing to its peninsular character, the capes and headlands of Europe are extremely numerous.

In the Arctic Ocean: C. Nordkyn, in Finmark, the most northern point of the continent (lat. 71° 5′); North Cape in I. Mageröe; C. Jelania, north-east of Novaia Zemlia; Point Look-out, south of Spitzbergen; C. Nord, north-west of Iceland.

In the Baltic: The Naze, south of Norway; Skaw, north of Denmark; Hango Point, south-west of Finland; C. Domesnes, north of Courland.

In North Sea and Atlantic: Sumburgh Head, south of Shetland; Dennis Ness, north of Orkney; Dunnet Head, Duncansby Head, and Cape Wrath, north of Great Britain; Buchanness the most eastern, Point of Ardnamurchan the most western, and Mull of Galloway the most southern points of Scotland; Lowestoft Ness the most eastern, South Foreland the most south-eastern, Lizard Point the most south-western, and Land's End the most western points of England; St David's Head in the south-west, and Holyhead in the north-west of Wales; Malin Head in the north, Fair Head in the north-east, Carnsore Point in the south-east, C. Clear in the extreme south, and Dunmore Head in the extreme west of Ireland; Capes Gris-Nez, Barfleur, La Hague, in the English Channel; Raz Point, the extreme north-west of France; Capes Ortegal and Finisterre, north-west of Spain; Cabo da Roca, in Portugal, the most western point of the continent; C. St Vincent, south-west of Portugal; Pt. Albernos, in the Azores, the most western point of insular Europe.

In the Mediterranean: Punta da Tarifa in Spain, the most southern point of the continent; Capes de Gata, Pálos, St Martin, Creux, east of Spain; Corso, north of Corsica; Teulada, south of Sardinia; Passaro, S. Vito, and Rasolcomo, the three extremities of Sicily; Spartivento, Nau, and di Leuca, south of Naples; Otranto and Gargano, east of Naples; Promontore, south of Austria; Matapan, south of Greece; Matala (Crete), the most southern point of insular Europe; Chersonese, south-west of Crimea; Abcheran, in the Caspian, the eastern extremity of Mount Caucasus.

9. **Islands.**—Very numerous, and best arranged in groups or classes as follows:—

In the Arctic Ocean: Novaia Zemlia ("new land") and Vaigatch, north-east of Russia, and forming an insular prolongation of the Ural Mountains; Spitzbergen and the Seven Sisters, midway between Novaia Zemlia and Greenland, and forming the most northern known land on the globe (lat. 80° 48′); Kolguev, at the entrance to the Gulf of Tcheskaia; Mageröe group, fringing the north-west coast of Finmark; Loffoden Islands, west of Norway.

In the Atlantic: Iceland, 700 miles west of Norway, 300 east of Greenland, and immediately south of the Polar Circle; Färoe Isles, 22 in number, midway between Iceland and Shetland, and at the northern limit of the growth of grain; the British Isles, 5500 in number, separating the Atlantic from the North Sea (principal, Great Britain, the largest island belonging to Europe, and the seventh largest in the world; Ireland, Anglesea, Isle of Man, Hebrides or Western Islands, Orkney

Islands, Shetland Islands, Isle of Wight, Scilly Islands); the Norman or Channel Isles, north of France; the Azores, a volcanic group, 9 in number, 800 miles west of Portugal.

In the Baltic: The Danish group, between Denmark and Sweden (principal, Seeland, Fühnen, Langeland, Laaland, Falster, Alsen, Bornholm); the Swedish group, south-east of Sweden, viz. Gothland and Oeland; Rügen, north-west of Prussia; the Aland Isles, a group of 200 islands and rocks at the entrance of the Gulf of Bothnia; the Livonian group (Oesel and Dago), at the mouth of the Gulf of Riga; Cronstadt or Kotlinoi, in the eastern extremity of the Gulf of Finland, with a celebrated Russian fortress.

In the Mediterranean: The Balearic Isles, east of Spain (principal, Majorca, Minorca, Iviça, and Formentera); the Sardo-Corsican group, west of Central Italy (principal, Sardinia, Corsica, Elba); the Sicilian group, south-west of Naples (principal, Sicily, Lipari Isles, Ustica, and Pantellaria); the Maltese group, or Malta, Gozo, and Comino; the Illyrian archipelago, in the Gulf of Quarnero; the Dalmatian archipelago, on the west coast of Dalmatia; the Ionian Isles, west of Greece; Eubœa or Negropont, east of Hellas; the Cyclades, east of the Morea, arranged in three almost parallel groups; the Sporades, north of Eubœa; Candia, south-east of the Morea.

10. **Seas, Gulfs, and Straits.**—No other continent has so many inland seas and arms of the sea.

The Mediterranean, between Europe and Africa, 2300 miles long, and 867,000 miles in area. Its principal members are, Gulf of Lions, Gulf of Genoa, the Tyrrhenian Sea, between Italy and the Sardo-Corsican islands; the Adriatic, between Italy and Turkey; Ionian Sea, between Greece and Naples, with its parts the Gulfs of Taranto, Arta, and Corinth; the Archipelago, or Ægean Sea, between Greece and Asia Minor, with its parts the Gulfs of Argolis, Egina, Volo, and Salonika; Sea of Marmora, between European and Asiatic Turkey.

The Black Sea, between Russia and Asiatic Turkey, 690 miles long by 380 miles broad, and having an area (including the Sea of Azov) of 181,000 square miles. Its branches are, Gulf of Odessa, Strait of Kherson, Gulf of Perekop, Sea of Azov, Gulf of Sivash or Putrid Sea.

The Caspian Sea, south-east of Russia, 700 miles long, 200 broad; area, 140,000 square miles; its surface 81½ feet lower than that of the Black Sea, and drained exclusively by evaporation; communicated at a remote period with the Black Sea, at which time its area was vastly larger: belongs more to Asia than to Europe.

The White Sea, an inlet of the Arctic Ocean, in the north of Russia; length 380, breadth 150 miles; area, 45,000 square miles: its parts are, Gulfs of Onega, Kandalask, and Arkhangel; *Tcheskaia Gulf* and *Sea of Kara*, north-east of Russia; Varanger Fiord, between Russia and Norwegian Lapland; West Fiord, between Norway and the Loffoden Isles.

The Baltic, a large inland sea communicating with the North Sea, and separating Central from Northern Europe; length 900 miles, breadth 180 miles; area, 135,000 square miles; shallow throughout, sailing dangerous, tides scarcely perceptible. Principal branches, Gulf of Bothnia, between Sweden and Finland; Gulf of Finland, south of Finland; Gulf of Riga or Livonia, between Livonia and Courland; Gulf of Dantzic, north of Prussia; Gulf of Lubeck, between Holstein and Mecklenburg.

The North Sea or *German Ocean*, between the British Isles and the continent; length from Shetland to Dover, 700 miles; greatest breadth, 420 miles; area, 244,000 square miles; traversed by immense sand-banks, as the Dogger Bank and Long Forties. *Main Branches*, the Skager Rack, between Norway and Denmark, 60 miles broad; the Kattegat, between Sweden and Denmark; the Dollart and Zuyder Zee, in the north of Holland; the English Channel, between England and France; the estuary of the Thames, the Wash, the Firths of Forth and Tay, the Moray and Pentland Firths.

The Irish Sea, between Great Britain and Ireland. *Branches*, North Channel, St George's Channel, Solway Firth, and Bristol Channel.

The Bay of Biscay, north of Spain, famous for its heavy seas and dangerous navigation.

THE PRINCIPAL STRAITS are: Strait of Gibraltar, uniting the Mediterranean with the Atlantic; Strait of Bonifacio, between Corsica and Sardinia; Strait of Piombino, between Tuscany and Elba; Strait of Messina, between Naples and Sicily; Strait of Otranto, between Italy and Turkey; Channels of Egripo, Talanti, and Trikeri, between Greece and the island of Negropont; the Hellespont or Dardanelles, uniting the Archipelago with the Sea of Marmora; the Bosphorus, or Strait of Constantinople, uniting the Sea of Marmora with the Black Sea; Strait of Kertch or Yenikaleh, between the Black Sea and Sea of Azov; Strait of Genitchi, between the Sea of Azov and the Putrid Sea; Pentland Firth, between Scotland and Orkney; Strait of Dover, between England and France; The Sound, between Sweden and the island of Seeland; Great Belt, between Seeland and Fühnen; Little Belt, between Schleswig and Fühnen; Vaigatch Strait, between the island of Vaigatch and the coast of Arkhangel; Karskaia Strait, between Vaigatch and Novaia Zemlia; Matotshkin Shar, between the two main islands of Novaia Zemlia.

11. **Mountain Systems.**—With the exception of Russia, which is nearly all one uniform plain, and the northern portion of Central Europe, which is also remarkably level, Europe is one of the most mountainous of continents. The various chains, however, can be all arranged into eight grand mountain-systems—viz. the British, Hesperian, Sardo-Corsican, Alpine, Scandinavian, Sarmatian, Uralian, and Caucasian. The two last are partly European and partly Asiatic; but as their highest summits occur in this continent, and as there are no other mountains in Eastern or South-eastern Europe, they are most conveniently treated of here. These eight systems, with their widely-extended bases and ramifications, occupy the entire area of Europe, insular as well as continental,—the groups of islands that surround the continent being merely the exposed summits of partially submerged mountain-chains.

I. THE BRITISH SYSTEM occupies the entire area of the British archipelago, from the Scilly Isles to Shetland, a distance of 800 miles in length, and 122,550 square miles in area. It embraces also the Făroe group, midway between Shetland and Iceland. As compared with some of the other mountain-systems of Europe it is of very moderate elevation, and nowhere reaches the line of perpetual snow; though Ben Nevis, its culminating-point (4368 feet), lat. 56° 47′, probably comes short of it by less than 700 feet. The system embraces various mountain-ranges, the principal of which traverses the extreme length of the largest island, and forms the watershed between the North Sea and the Atlantic. The mountains of Ireland and of the smaller islands are of greatly inferior elevation. We subjoin the names of the principal ranges, with the height of their loftiest mountains, expressed in feet :—

	Feet.
Faröe Isles: Island of Osteroe,	2,864
Shetland Isles: Rooness, in Mainland,	1,476
Orkneys: Hill of Hoy,	1,556
Northern Range of Scotland:	
Morven, Caithness,	2,334
Ben Cliberich, Sutherland,	3,165
Ben Wyvis, Ross-shire,	3,720
Ben Attow, do.	4,000
Grampians: Cairngorm, Banffshire,	4,091
Ben Macdui, Aberdeenshire,	4,300
Ben Nevis, in the south-west of Inverness, the highest mountain in the British Isles,	4,368
Cheviot Hills, between Scotland and England,	2,741
Pennine Chain, in north of England,	2,911
Cumbrian Chain, in Cumberland,	3,166
Cambrian Chain, in Wales (Snowdon),	3,571
Devonian Chain, in the south-west of England,	2,077
Irish Mountains: M'Gillicuddy's Reeks, in south-west,	3,410
Height of snow-line in the centre of the archipelago—lat. 55°,	5,000
Do. in the Grampian range,	4,500

II. The Hesperian or Spanish System occupies the whole Spanish Peninsula, the Balearic Isles, and the portion of France which lies south-west of the Garonne. It forms in its interior an elevated plateau of great extent, which has an average height of about 2500 feet, and embraces many lofty mountain-ranges, the principal of which are subjoined :—

	Feet.
The Pyrenees, in the north, separate the Bay of Biscay and the Garonne basin from the basins of the Douro and Ebro : Pic Nethou (*Maladetta*),	11,168
Cantabrian Chain, between Douro and Tagus : Sierra Gredos,	10,552
Mountains of Toledo, between the Tagus and Guadiana: Sierra Guadalupe,	5,110
Sierra Morena, between the Guadiana and Guadalquivir : *Aracena*,	5,550
Balearic Mountains,	5,114
Sierra Nevada, between the Guadalquivir and the Mediterranean, contains Cerro Mulhacen, the culminating-point of the system,	11,663
Line of perpetual snow on Sierra Nevada,	11,200
Do. in the Pyrenees,	8,000

N.B.—For a more complete view, see under "Spain" and "Portugal."

III. THE SARDO-CORSICAN SYSTEM is confined to the islands Corsica and Sardinia, and extends in its principal chain from Cape Corso in the former to Cape Teulada in the latter.

	Feet.
Monte Rotondo in Corsica, the culminating-point of the system, attains an elevation of . .	9,068
Monte Genargentu, in Sardinia, . . .	7,000
Snow-line in lat. 42° 30′, . . .	9,000

IV. THE ALPINE SYSTEM occupies the whole of Central Europe, together with France, Italy, and Turkey, and extends from the Mediterranean to the Baltic, and from the Garonne to the Dniester. It embraces five distinct minor systems, all of great altitude, including the Alps proper, the culminating-point of which, and, as is usually supposed, of all Europe, is Mont Blanc in Savoy (15,744 feet). In reality, however, that honour should be awarded to Mount Elburz, the culminating-point of the Caucasus chain, which is 2749 feet higher than Mont Blanc, and within the limits of Europe.

(1.) The Alps proper, a huge crescent-shaped range, extending from Nice to Vienna, and bounded by the basins of the Rhone and Doubs on the west, of the Aar and Danube on the north and east, and by those of the Po and Save on the south: total length, 600 miles. It consists of two contiguous chains—viz., the *Western Alps*, from the Mediterranean at Nice to Mont Blanc in Savoy, dividing France from Italy, and the Rhone from the Po; and the *Eastern Alps*, of much greater breadth, and consisting of two series—a northern and a southern—the former including the Bernese Alps, the Alps of St Gall, and the Noric Alps, and extending nearly to Vienna; and the latter including the Pennine Alps, the Helvetian Alps, the Rhaetian Alps, the Carnic and Julian Alps.

Western Alps.	Feet.
Monte Viso, ...	13,600
M. Pelvoux, (culminating-point of France), .	14,108
M. Genèvre, ...	11,785
Eastern Alps, N. Series.	
Finster-aar-horn, ...	14,026
Gros Glockner, ...	12,425
Eastern Alps, S. Series.	
M. Blanc in Savoy (the culminating-point of the Alps), ...	15,744
Great St Bernard, ...	11,080
M. Cervin, ...	14,771
M. Rosa (culminating-point of Switzerland), .	15,208
The Simplon, ...	11,510
M. Furca, ...	14,037
M. St Gothard, ...	10,900
Ortler Spitz (culminating-point of Austria), .	12,811
Height of line of perpetual snow in Swiss Alps,	8,900

(2.) The French or Gallo-Francian mountains, embracing all the mountains of France north of the Garonne and west of the Rhone, and connected with the Alps proper by the Jura chain between France and Switzerland; and by the Vosges, a continuation of the Jura, between Lorraine and Alsace. The other chains are those of Côte d'Or, Cevennes, and Auvergne. (*See* under "France.")

	Feet.
Mount Molleson, in Jura,	6,588
Ballon de Guebwiller (Vosges)	4,690
Côte d'Or,	1,965
Cevennes, *M. Mezin,*	5,794
Auvergne, *Puy de Sancy,*	6,220

(3.) The Apennines, 800 miles long, set out from the Maritime Alps, traverse the entire length of Italy, reappear in the island of Sicily and form the watershed between the Mediterranean on the one side and the Po and Adriatic on the other: culminating-point Mount Etna in Sicily, but in the Apennines proper, Monte Corno in the north of Naples.

	Feet.
Monte Cimone, between Modena and Tuscany,	6,975
Monte Corno, in north of Naples,	9,521
Monte Majella, do.	9,113
M. Vesuvius, near Naples,	3,948
M. Etna, the culminating-point of the system,	10,874
M. Cuccio, near Palermo,	10,871
Height of snow-line in Sicily,	9,500
Height in Central Italy,	8,400

(4.) The Slavo-Hellenic mountains denote all the mountains in the Hellenic peninsula south of the Danube and Save, together with those of Croatia and Dalmatia. There are two principal ranges—one, the *Hellenic*, stretching southward along the east coast of the Adriatic, and terminating at Cape Matapan in Greece; the other, the *Balkan*, branching off from the Hellenic in the north-east of Albania, pursuing an easterly direction to Cape Emineh in the Black Sea, and forming the boundary between Roumelia and Bulgaria. The latter divides into two branches—the Balkan proper, and Despoto Dagh.

Hellenic Range.	Feet.
M. Guione, in Greece,	8,241
M. Olympus, in Thessaly, the culminating-point,	9,749
Balkan Range.	
Great Balkan,	8,874
M. Athos, in the Despoto Dagh,	9,628
Rilo Dagh, or Rhodope, in do.,	8,313
Height of snow-line on M. Olympus,	9,000

(5.) The Hercynio-Carpathian system comprises all the mountains lying between the Danube, Dniester, Vistula, Rhine, and the Baltic, being the entire remainder of the great Alpine system. The following are the principal ranges:—

The *Carpathians*, or *Krapacks*, between the Danube and Dniester, may be regarded as a continuation of the Noric Alps, and contain the highest summits in this system,—viz.

	Feet.
M. Botschetje in Transylvania, ...	9,528
M. Ruska Poyana, do.	9,500
Riesengebirge, between Bohemia and Moravia, .	5,275
Erzgebirge, between Bohemia and Saxony,	2,500
Schwartzwald, in Baden, ...	4,590
Bohmerwald, between Bohemia and Bavaria,	4,613
The Harz, in Hanover and Prussia,	3,740
Height of line of perpetual snow in the Carpathians, probably about	6,000

V. THE SCANDINAVIAN SYSTEM occupies the entire Scandinavian peninsula, together with Lapland and Finland, extends from the Atlantic on the west to the White Sea and Lake Ladoga on the east, and from the North Cape to the Baltic: has three insular prolongations; one into the Baltic, embracing Bornholm, Oeland, Gothland, Aland; a second into the Atlantic, embracing the Norwegian archipelago; and a third into the Arctic Ocean, embracing Spitzbergen, the Seven Sisters, and Jan Mayen midway between Iceland and Spitzbergen.

The only important mountain-range within this extensive area commences at the Naze in the south of Norway, proceeds northward through that kingdom as far as the latitude of Trondhjem, then forms the boundary between Norway and Sweden as far as the latter country extends, and terminates at the North Cape in Lapland, after traversing a total length of about 1150 miles. In the south of Norway its breadth extends about 200 miles, but north of Trondhjem only 60 miles. The chain is not continuous, but consists rather of a series of broad plateaux, separated occasionally by deep and narrow valleys, and very rich in minerals. There are three principal ranges—the Hardanger, or Langefield, in the south, the Dovrefield in the middle, and the Kiolen Mountains in the north; the highest elevations are as follows:—

	Feet.
Langefield: Skagstol-tind, ...	8,670
Dovrefield: Sneehätten, ...	7,620
Kiolen: Sulitelma (lat. 67°), ...	6,200
North Cape, ...	1,161
Height of snow-line in the Langefield, .	5,000
Do. do. in Sulitelma, . .	3,500
Do. do. at North Cape, . .	2,400

VI. THE SARMATIAN SYSTEM is nearly coincident with European Russia. It is bounded on the west by the White Sea, Lake Ladoga, the Baltic, the Vistula, and the Dniester; and extends eastward till it meets the Urals and Mount Caucasus. There is no true mountain-chain in this wide area, which embraces more than a half of Europe; the *Valdai Hills*, in the Government of Novgorod, attain an elevation of only 1100 feet, and are important only as forming the watershed between the Baltic, the Black Sea, and the Caspian.

VII. THE URALIAN SYSTEM forms a natural boundary between Europe and Asia, and the watershed between the extensive basins of the Volga and the Obi. The principal chain (the Urals) extends from Orenburg, on the river Ural, to the Arctic Ocean, and reappears in the lengthened insular group of Novaia Zemlia; length, 1680 miles. It consists of round-backed, plateau-shaped masses of very moderate elevation, generally not exceeding 2000 feet, but rich in gold and other metals. The highest summits are:—

	Feet.
Konjak-Ofski (lat. 59° 45′), . . .	5,397
Obdorsk (lat. 67°), ...	5,286

VIII. THE CAUCASIAN SYSTEM, extending in one immense chain from the Black Sea to the Caspian, forms the south-eastern boundary of European Russia, and separates the basins of the Kuban and Terek, on the north side, from those of the Kur and Rioni on the south. Length, 750 miles; mean elevation, from 8,000 to 9,000 feet. The culminating-point of the system, and in fact of the entire continent, is Mount Elburz, near the centre of the chain, 18,493 feet above the sea, and 2,749 feet higher than Mont Blanc, the highest summit of the Alps; and it, together with the other most elevated summits, occurs on the European side of the boundary.

	Feet.
Mount Elburz (lon. 42° 30′), . . .	18,493
Mount Kazbek (lon. 44° 20′), . . .	16,523
Height of line of perpetual congelation, .	11,000
Limit of the cereals, ...	7,000

12. **Volcanoes.**—The volcanoes of Europe, active or extinct, are very numerous. Of the former upwards of twenty are enumerated, all of which, except Mount Vesuvius, near Naples, are situated in islands; but the latter occur more frequently in the interior of the continent, as the mountains of Auvergne in France, the eastern Pyrenees near Olot, in Catalonia, the Eifel in Prussia, the Westerwald, between Nassau and Westphalia, the Vogelsberg, between the Main and Weser, and many others in the middle of Germany.

The principal active volcanoes are:—Mount Vesuvius* in Naples; Mount Etna† in Sicily; Stromboli,‡ Vulcano, and Vulcanello, in the Lipari Islands; Mount Hecla,* and several others, in Iceland; Mount Beeren in Jan Mayen, midway between Iceland and Spitzbergen; Sarytcheff in the north of Novaia Zemlia, the most northern of known volcanoes. The Azores are all of volcanic origin, and contain many recently-extinct volcanoes; as also many of the Cyclades, and the north-west portion of the island of Sardinia. The earthquake district of Europe extends from the Caspian Sea to the Azores, the central line of concussion being more or less parallel to the Pyrenees, Alps, Carpathian and Caucasian Mountains.

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* This celebrated volcano, the only important active one on the continent, buried the two cities, Herculaneum and Pompeii, with their inhabitants, during an eruption in the year 79 B.C.

† The largest and most famous volcano in Europe: sixty eruptions are recorded as having taken place during the historic period, the last in 1832.

‡ Constantly burning, and sometimes called, in consequence, the lighthouse of the Mediterranean.

13. **Plains and Table-Lands.**—Notwithstanding the highly mountainous character of Western Europe, by far the greater portion of its surface is occupied by plains and elevated plateaux or table-lands.

Of the former the most important are—the Great Plain of Central and Eastern Europe, extending from the North Sea to the Urals and Caspian, and from the White Sea to the Carpathians and German mountains; the Hungarian Plain, traversed by the Danube and Theiss, 300 miles long, and from 300 to 400 feet above the sea-level; Plain of the Lower Danube, between the eastern Carpathians and the Balkans; Plain of Bohemia, in the basin of the Upper Elbe; Plain of Lombardy, between the Alps and Apennines, and watered by the Po.

The principal table-lands are—the Plateau of Central Spain, of great extent, and about 2500 feet high; the Plateaux of Langres, Orleans, and Auvergne, in Central France; and the Plateau of Bavaria, about 2000 feet high.

14. **Watershed, River-Basins, and Capitals.**—All the rivers of Europe belong to one or other of seven great basins,—the Arctic, Atlantic, and German Oceans, the Baltic, Mediterranean, Black, and Caspian Seas. The elevated ridge which separates one basin from another is called the *Watershed*, and that which divides the seven basins into two principal groups is denominated the *Great Watershed* of Europe.

Commencing at the south-western extremity of the continent, near the Strait of Gibraltar, the latter pursues a general north-easterly direction, till it arrives at the northern termination of the Ural Mountains, thus cutting Europe diagonally into two great sections or slopes—the one inclining to the north-west, and the other to the south-east. By glancing at a map of Europe it will be seen that all the great rivers follow one or other of these two directions. Hence the seven basins may be reduced to *two grand basins*, one of which will include all the rivers finding their way to the Atlantic and Arctic Oceans, with their branches the North Sea, the Baltic, and the White Sea; and the other, those flowing into the Mediterranean, with its branches the Adriatic, the Black Sea, and the Caspian. For though the two last-mentioned seas are at present separated by a slight elevation, it is certain they were united during the Tertiary ages.

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* Its last great eruption (in 1845) sent the ashes as far as the Orkneys, 600 miles distant.

But let us trace the Great Watershed more exactly. Commencing, as we have said, near the Rock of Gibraltar, it follows the crest-line of the Sierra Nevada, Pyrenees, Cevennes, Côte d'Or, Vosges, and Jura Mountains; passes north of Lake Geneva to the Bernese Alps and Mount S. Gothard; sweeps round Lake Constance, which it keeps on the left, around the source of the Danube, separating its basin from those of the Rhine, Elbe, and Oder; passes between the basins of the Vistula and Dniester, and of the Düna and Dnieper, then north and east through the Valdai Hills, and around the head-waters of the Volga; pursues its course between Lakes Onega and Bielozero, turns south-east around the sources of the Northern Dwina and Petchora, whose basins it separates from that of the Volga; and then, proceeding northward along the Uralian Chain, it finally arrives at the Arctic Ocean.

The following Table shows the total and direct lengths in English miles of all the principal rivers, the areas of their basins in geographical square miles, and the capitals of the States and provinces embraced in those basins. The rivers are arranged under the seven oceanic basins to which they respectively belong, and in the order in which their mouths would occur to an exploring expedition, which, setting out from the northern extremity of the Urals, should skirt the coast westward, southward, and then eastward, till it arrived at the western extremity of Mount Caucasus. The capitals of independent States are distinguished by SMALL CAPITALS, those of provinces by Roman letters; and when the name of the State is different from that of its capital, the former is added within parentheses.

THE RIVER-BASINS OF EUROPE.

Name of River or Estuary.	Total Length in English Miles.	Direct Length of Basin in English Miles.	Area of Basin in Geographical Square Miles.	Capitals of States and Provinces in each Basin.
1. *Basins inclined to the Arctic Ocean.*				
Kara, . .	125	100	..	
Petchora, . .	900	520	48,800	
Mezen, . .	400	300	30,580	
Dwina, . .	700	500	106,400	Arkhangel, Vologda.
Onega, . .	300	250	20,000(?)	
Alten Fiord, .	150	80	..	Altengard (Finmark).
2. *Basins inclined to the Atlantic and North Sea.*				
Trondhjem Fiord,	160	60	..	Trondhjem.
Torrisdals, .	120	100	..	Christiansand.
Christiania Fiord,	60	55	..	CHRISTIANIA (Norway).
Gotha, . .	400	300	..	Göteborg (Gothland).

Name of River or Estuary.	Total Length in English Miles.	Direct Length of Basin in English Miles.	Area of Basin in Geographical Square Miles.	Capitals of States and Provinces in each Basin.
		3. Basins inclined to the Baltic.		
L. Mälar, . .	170	130	..	STOCKHOLM (Sweden).
Dal, . . .	250	200	..	
Angerman, .	150	120	..	Hernösand (Norrland).
Umea, . .	250	220	..	
Neva and Gulf of Finland, .	625	500	67,200	Helsingfors (Finland), Revel (Esthonia), Pskov, ST PETERSBURG (Russia), Novgorod, Petrozavodsk (Olonetz).
Düna, . .	400	300	33,440	Riga (Livonia), Vitebsk.
Niemen, . .	400	270	32,180	Grodno, Suwalki (Augustowo), Wilna.
Pregel, . .	120	120	5,920	Königsberg (Prussia Proper).
Vistula, . .	530	360	56,640	Plock, Warsaw (Poland), Minsk, Sandomir, Bialystok, Siedlec, Lemberg (Galicia), Lublin.
Oder, . .	445	360	39,140	Stettin (Pomerania), Breslau (Prussian Silesia), Posen (Prussian Poland), Kalish, Troppau (Austrian Silesia).
Stör, . .	95	55	..	SCHWERIN (Mecklenburg-Schwerin).
Trave, . .	50	40	..	LUBECK.
Schleifiord, .	25	20	..	Schleswig.
		4. Basins inclined to North Sea.		
Liimfiord, .	100	90	424	Aalborg (North Jutland).
Elbe, . .	550	420	41,860	Gluckstadt (Holstein), HAMBURG, Magdeburg (Prussian Saxony), DESSAU (Anhalt Des. Kothen), DRESDEN (Saxony), NEU-STRELITZ (Mecklenburg-Strelitz), BERLIN (Prussia), BERNBURG (Anhalt-Bernburg), RUDOLSTADT (Schwartzburg Rud.), GREITZ (Reuss), ALTENBURG (Saxe-Alt.), SONDERSHAUSEN (Schwarzburg-Sonder.), GOTHA (Saxe-Coburg-Gotha), WEIMAR (Saxe-Weimar-Eisenach), Prague (Bohemai).
Weser, . .	230	250	13,120	BREMEN, BUCKEBURG (Lippe-Schaumburg), MEININGEN (Saxe-Mein.-Hildburghausen), OLDENBURG, HANOVER, BRUNSWICK, DETMOLD (Lippe-Det.), AROLSEN (Waldeck), CASSEL (Hesse-Cassel).

Name of River or Estuary.	Total Length in English Miles.	Direct Length of River in English Miles.	Area of Basin in Geographical Square Miles.	Capitals of States and Provinces in each Basin.
Basins inclined to North Sea (continued).				
Ems,	160	130	..	Münster (Westphalia).
Hunse,	50	40	..	Gröningen, Assen (Drenthe).
Vecht,	90	60	..	Zwoll (Overyssel).
Rhine,	600	400	65,280	AMSTERDAM (Netherlands), Utrecht, Arnhem (Guelderland), Cologne (Rhenish Prussia), WIESBADEN (Nassau), CARLSRUHE (Baden), Strasbourg(1) (Alsace), VADUTZ (Liechtenstein), Nancy (Lorraine), FRANKFORT, HOMBURG (Hesse - H.), DARMSTADT (Hesse - D.), STUTTGART (Würtemberg), BERN (Switzerland). (2)
Meuse,	580	230	..	Bois-le-duc (N. Brabant), Maestricht (Dutch Limburg), Liege, Namur, Arlon (Belgian Luxemburg.)
Scheldt,	210	120	..	Middelburg (Zealand), Antwerp, Bruges (W. Flanders), Ghent (E. Flanders), BRUSSELS (Netherlands), Hasselt (Belgian Limburg), Lille (French Flanders), Arras (Artois), Mons (Hainault).
Basins inclined to the Atlantic (No. 2 continued).				
Somme,	115	90	..	Amiens (Picardy).
Seine,	414	250	22,620	Rouen (Normandy), PARIS (France), Troyes (Champagne).
Vilaine,	125	80	..	Rennes (Bretagne).
Loire,	530	350	33,940	Angers (Anjou), Tours (Touraine), Orleans (Orleannais), Nevers (Nivernais), Le Mons (Maine), Limoges (Limousin), Gueret (La Marche), Poitiers (Poitou), Bourges (Berry), Moulins (Bourbonnais), Clermont (Auvergne).
Charente,	200	110	..	Rochelle (Aunis), Saintes (Saintonge), Angoulême (Angoumois).
Garonne,	300	230	24,450	Bordeaux (Guienne), Toulouse (Languedoc), Auch (Gascogne), Foix (Comté de Foix).

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(1) For the sake of brevity, the old provinces of France and Spain are those here employed, but the new divisions will be found in the corresponding tables under those countries.

(2) The capitals of the Swiss cantons will be found in the River System of Central Europe.—(*See under "Austria."*)

Name of River or Estuary.	Total Length in English Miles.	Direct Length of Basin in English Miles.	Area of Basin in Geographical Square Miles.	Capitals of States and Provinces in each Basin.
Basins inclined to the Atlantic (No. 2 continued).				
Adour,	95	90		Pau (Béarn).
Nervion,	45	30		Bilbao (Basque Provinces).
Nalon,	62	50		Oviedo (Asturias).
Ulla,	64	50		Santiago (Galicia).
Minho,	220	150	11,800	
Ria d'Este,	65	50		Braga (Minho).
Douro,	450	340	29,250	Oporto (Douro). Braganza (Tras-os-Montes), Leon, Burgos (Old Castile).
Mondego,	180	90	..	Coimbra (Beira).
Tagus,	540	450	21,700	LISBON (Portugal), MADRID (Spain).
Sado,	100	70	..	Evora (Alentejo).
Guadiana,	400	320	19,300	Badajos (Sp. Estremadura).
Guadalquivir,	300	270	15,040	Seville (Andalucia), Granada.
5.—Basins inclined to the Mediterranean.				
Segura,	180	120	..	Murcia.
Guadalaviar,	130	100	..	Valencia.
Ebro,	340	280	23,100	Zaragoza (Arragon), Pamplona (Navarre).
Llobregat,	75	70	..	Perpignan (Rousillon).
Rhone,	645	340	28,100	Avignon (Com. d'Avignon), Lyon (Lyonnais), Grenoble (Dauphiné), Besançon (Franche Comté), Dijon (Bourgogne), Chambery (Savoy).
Arno,	90	75	..	FLORENCE (Tuscany).
Tiber,	185	130	..	ROME (Pontifical States).
Po,	450	280	29,950	TURIN (Sardinia), MODENA, PARMA, Venice, Milan (Lombardy).
Narenta,	140	70	..	Mostar (Herzegovina).
Bojana,	80	65	..	Scutari (Albania).
Salembria,	110	65	..	Larissa (Thessaly).
Vardar,	170	125	..	Saloniki.
Maritza,	260	160	..	
6.—Basins inclined to the Black Sea.				
Danube,	1795	980	234,000	Silistria (Bulgaria), Belgrade (Servia), Peterwardein (Military Frontier), Buda (Hungary), VIENNA (Austria), Linz (Upper Austria), Jassy (Moldavia), Bucharest (Wallachia), Agram (Croatia), Bosna-Serai (Bosnia), Laybach (Illyria), Klausenburg (Transylvania), Essek (Scla-

Name of River or Estuary.	Total Length in English Miles.	Direct Length of Basin in English Miles.	Area of Basin in Geographical Square Miles.	Capitals of States and Provinces in each Basin.
Basins inclined to the Black Sea (continued).				
Danube (*cont.*) .				vonia), Grätz (Styria), Brünn (Moravia), Innsbrück (Tyrol), MUNICH (Bavaria), Salzburg, Temeswar (Banat).
Dniester, . .	500	400	20,000	Kamienetz (Podolia), Kichinev (Bessarabia).
Dnieper and Bug,	..	640	169,600	Kherson, Ekaterinoslav, Kiev, Moghilev Smolensk, Poltava, Tchernigov, Koursk, Jitomir (Volhynia), Minsk.
Don, . .	995	500	168,420	Tcherkask (Don Cossacks), Stavropol, Kharkov, Voronej.
Kuban, . .	380	280	..	Ekaterinodar (Black Sea Cossacks).
7.—Basins inclined to the Caspian.				
Volga, . .	2400	1080	397,400	Astrakhan, Saratov, Samara, Simbirsk, Kazan, Nijni-Novgorod, Kostroma, Jaroslav, Twer, Perm, Viatka, Ufa (Orenburg), Penza, Riazan, Kaluga, Orlov (Orel), Vladimir, Tambov, Moscow, Tula.
Ural, . .	1800	550	83,200	No capitals.
Kur, . .	520	400	64,640	Teflis, Erivan, Shemakha (*all in Transcaucasia*).

15. **Lakes.**—Lakes being for the most part mere expansions of the rivers that drain them, the most natural way of treating them is to group them together in the order of the river-basins to which they belong.

Clyde Basin: Loch Lomond, the largest lake in Scotland, drained by the Leven; area, 45 square miles.

Leven: Windermere, largest lake in England, drained by the Leven, 10 miles long; area, about 5 square miles.

Dee: Lake Bala, the largest in Wales, and drained by that river, 8 miles long.

Bann: Lough Neagh, in Ireland, the largest in the British Isles; area, 153 square miles.

Dwina: Kubinsköe, in Vologda, North Russia, drained by the Sukhona.

Onega: Lakes Latcha and Voje, in Olonetz.

Vygh: Vigo and Sego, in Olonetz.

Kem: Kunto and Niuk, in W. of Arkhangel.

Kovdo: Kovdo, Piavo, and Imandra, in Arkhangel.

Varanger Fiord: Enara, drained by the Patajoki or Pasvig, in N. of Finland.

Glommen: Lake Miösen, in S.E. of Norway.

Gotha: Wener, in S.W. of Sweden, 2120 square miles; and Faemund, in E. of Norway, drained by the Clara.

Motala: Wetter, E. of Lake Wener.

Arboga: Mälar and Hielmar, in the E. of Sweden.

Dal: Siljan, in the centre of Sweden.

Indals: Storsion, N. of Lake Siljan.

Skeleftea: Stor and Horn, united, in N. of Sweden.

Lulea: Stora-Lulea, in N. of Sweden.

Tornea: Tornea, in N.W. of Sweden.

Ulea: Ulea, in the centre of Finland.

Borgo A: Pajani, in the S. of Finland.

Neva: Ladoga (the largest in Europe, area, 6190 square miles), Saima, Orivesi, Pielis, Kuopio or Kalavesi, Ilmen, Onega, Voldozero, all in Finland and Olonetz.

Narova: Peïpus, or Tchoudskoë, between Livonia and St Peters-

el: Mauer See, in East Prussia.

Vistula: Spirding See, in East Prussia, drained by the Pische, an affluent of the Narew.

Stör: Schwerin, in Mecklenburg-Schwerin.

Elbe: Müritz, in Mecklenburg-Strelitz, drained by the Havel.

Rhine: Boden See, on the Rhine; Thun and Brienz, on the Aar; Zurich and Wallenstadt, on the Limmat; Lucerne and Zug, on the Reuss; Bienne and Neuchâtel, on the Thiele: all in Switzerland.

Rhone: Leman or Geneva, between Switzerland and Savoy; Annecy, in Savoy.

Po: Garda, drained by the Mincio; Como, by the Adda; Maggiore and Lugano, by the Ticino.

Danube: Balaton or Platten See, drained by the Sio; and Neusiedl, by the Raabnitz: both in Hungary.

Don: Manytch, in Caucasus, drained by the Manytch.

Volga: Seligher, in Russia, near the Valdai Hills, forming the source of the Volga.

16. **Climate.**—The climate of Europe is greatly milder than in other continents under the same latitude; but it presents striking diversities in different parts, arising mainly from the following causes:—

1st, *Its Position relative to the Atlantic.*—The prevailing winds are from the W. and S.W., and hence pass over that ocean before arriving here; acquire its temperature; become laden with its moisture; and, striking the western shores of the continent, powerfully affect the climate.

2d, This effect is greatly increased by the warm *Ocean-Current*, called *The Gulf Stream*, which, setting out from the Gulf of Mexico, at a very high temperature, proceeds along the coast of North America, crosses the Atlantic in a north-eastern direction, arrives at the western shores of Europe, and imparts to many places a temperature and climate greatly milder than they would otherwise possess.

3d, The *Elevation* of the land above the sea-level.

4th, The *Direction* of the slope, as indicated by the *Great Watershed* of Europe (described in par. 14, p. 76).

5th, The *Situation* of the several countries in regard to great *mountain-chains* in their vicinity.

6th, The *Latitude* of the place.

7th, *Proximity to other peculiar Climatic Regions.*—The south of Europe is considerably affected by the proximity of Africa, which renders its summer climate oppressive; while Northern Europe is continually exposed to the chilling winds of the Polar Seas and Siberia.

If the Northern Hemisphere be divided into six *Isothermal Zones* (viz. the Equatorial, Warm, Mild, Cool, Cold, and Polar Zones), which, as regards climate, are greatly more important than *zones of latitude*, it will be found that no part of Europe lies within either of the *extreme* zones, that is, the Equatorial and Polar.

THE WARM ZONE, which is bounded by the Isotherms of 77° and 59° Fahr., and whose average annual temperature is 68°, includes nearly all the Spanish peninsula, the islands Corsica, Sardinia, Sicily, Malta, and Crete, all Greece, and Italy south of Rome.

THE MILD ZONE, between the Isotherms of 59° and 41°, and with an average annual temperature of 50°, comprises all Central Europe (including France and the British Isles), the Faröe Isles, Scandinavia and Russia south of a line drawn through Bergen, Christiania, Stockholm, Riga, Moscow, and Orenburg.

THE COOL ZONE, between the Isotherms of 41° and 32°, and with an average annual temperature of 36°, includes nearly all Iceland, together with a broad belt of the continent lying between the Mild Zone and a line passing through Hammerfest, the mouth of the river Tornea, Arkhangel, and Tobolsk in Siberia.

THE COLD ZONE embraces all the remainder of the continent together with Spitzbergen, is bounded by the Isothermal curves of 32° and 5°, and enjoys a mean annual temperature of 18° Fahr.

The *Quantity of Rain* varies greatly in the different countries, but most of the variations can be traced to known laws, *e. g.*,

(1.) It decreases as we proceed from S. to N. At the equator, 96 inches fall in the year; in Italy, 45; England, 37; in North Germany, 22½; and at St Petersburg, 16 inches.

(2.) It decreases as we proceed from the shores of the Atlantic eastward. On the coast of Portugal, the amount is 111 inches; on the west of Ireland, 47 inches; but at London, 24 inches; Paris, 21 inches; Eastern Europe, 15 inches.

(3.) In Western Europe, and as far E. as Moscow, the rain-winds are from the S.W.; but farther E. and N. they come from the contrary direction.

(4.) In the Warm Zone it rains most in winter; in the Mild Zone, south of the Alps and Carpathians, most in autumn; in all the remainder of Europe, most in summer.

(5.) The number of rainy days decreases as we proceed from the west to the east side of the continent: thus in Ireland (east side), rain falls on 208 days; Netherlands, 170 days; west of Scotland (Cape Wrath), 250 days; east of Scotland (Edinburgh), 165 days: whereas in the north of Germany and Gulf of Finland, it falls on 152 days; Poland, 158 days; basin of the Volga, 90 days; in the interior of Siberia, 60 days.

(6.) The number of days on which snow falls increases from south to north: thus, at Palermo, in Sicily, on 1 day; Rome and Florence, 2; Venice, 5; Milan, 10; Paris, 12; Copenhagen, 30; St Petersburg, 171 days. At Gibraltar snow is rare, and Malta is never visited by snow-flakes.

The average amount of rain over all Europe is 34 inches. The rainiest localities in Europe are, Coimbra, in the Valley of the Mondego, where, according to some, the extraordinary amount of 225 inches falls annually; the Alps; Bretagne; Cornwall; the south of Ireland; and the north-west corner of Scotland.

17. **Geology.**--The following condensed epitome of the geology of Europe has been carefully prepared from the "Geological Map of Europe," edited by Sir Roderick I. Murchison and Professor Nicol, and forming Plate IV. of the new edition of Johnston's *Physical Atlas.**

Crystalline Strata, or Aqueous Unfossiliferous Rocks, prevail especially in north-western Europe, where they cover the whole surface of Scandinavia and Finland, with the exception of two extensive tracts in the centre and north of Norway. The other principal localities are Scotland, N. of the Grampians; the N. and N.W. of Ireland; Galicia, in Spain; the centre and west of France; Bohemia; north and east Hungary; the eastern side of Turkey, Greece, Corsica, and Sardinia; and the great mountain-ranges of the Continent, especially the Alps, Carpathians, Mount Caucasus, and the Urals.

Wherever crystalline strata greatly abound, they are penetrated through by GRANITIC ROCKS; as in Portugal and Galicia, Bretagne, the Grampians, the Loffoden Isles, Bohemia, Corsica, Sardinia, &c. TRAP ROCKS chiefly abound in Iceland, the Faröe Isles, Skye and Múll, County Antrim, North Wales, Sweden, Finland, the Urals, Lombardy, and S.W. of Spain; and VOLCANIC ROCKS in Naples, the Pontifical States, Sicily, Sardinia, Central France, and the Carpathians.

Silurian Rocks—also called *Lower Palæozoic*, because they contain the petrified remains of the earliest plants and animals yet discovered—occupy the two large tracts in Norway above referred to; an extensive belt S. of the Gulf of Finland, extending from Lake Ladoga westward to Dago, Oesel, Gothland, Oeland, and a large tract in the extreme S. of Sweden; the S. of Scotland, N.W. of England, nearly all Wales, and the W. of Ireland; Bretagne; the western half of the Spanish peninsula; large areas in southern and central Spain; the Julian and Carnic Alps; some parts of Bohemia; and a very long, narrow belt in the Urals, extending from the river Ural to the Arctic Ocean.

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* For the Palæontology of the different geologic systems and formations, we refer the student to pages 42-52 above.

Upper Palæozoic Strata, embracing the Devonian, Carboniferous, and Permian Systems, have their largest development in Russia, where they extend, without a break, from the Baltic to the Urals, and from the Arctic Ocean to Voronej, in the centre of the Don basin; and occupy another large tract in the basin of the Donetz, an affluent of the Don: they thus cover nearly a half of all Russia, but contain no coal, save along the Donetz, where mines are wrought to a considerable extent. The next most important tract occupied by this series is in the basins of the Rhine, Moselle, and Meuse, within the kingdoms of Prussia and Belgium. They are very extensively developed in the British Isles, especially in Ireland, where they cover four-fifths of the country; and in the larger island extend in a broad band from the Firth of Forth to Cornwall (a tract which is extremely rich in the valuable minerals coal and ironstone), and line the coast from Aberdeenshire to Caithness, extending to the Orkney Islands.

The **Secondary Series**, or *Mesozoic Group*, immediately overlies the Palæozoic, but differs from it widely in the character of its fossils. It embraces the Triassic, Jurassic or Oolitic, the Wealden, and Cretaceous Systems, and occupies a very large portion of the surface of Europe S. of lat. 55°; but rarely occurs N. of that parallel, except in three detached tracts in the N. E. of Russia (in the basins of the Petchora, Mezene, and Vychegda). In the S. of Russia it occupies extensive areas in the basins of the Ural, Volga, and Don, as well as of the Pripet and Desna, affluents of the Dnieper. In Turkey and Greece it occupies the greater part of the territory S. of the Danube and Save, and the island Candia; in Italy, a large portion of the Pontifical States, Naples, and Sicily; in Spain, a broad belt commencing at Gibraltar, and extending first N.E. and then N. to the Bay of Biscay; it occupies the W. of Portugal, between the Tagus and the Mondego; the greater part of France E. of Bretagne and N. of the Gironde; nearly all Germany Proper, between Hanover and the Danube; and more than a half of England, especially the east, centre, and south. Secondary Strata also cover the Northern Carpathians, and large portions of the Alps and Pyrenees.

The **Tertiary Series**, like the Secondary, prevails almost exclusively to the S. of lat. 55°, while the Palæozoic and Crystalline strata are found chiefly in the N. of Europe. Tertiary strata extend, with few interruptions, in a broad zone which, beginning at the North Sea and Baltic, proceeds in a S.E. direction to the Black Sea and Caspian, and extends in breadth from the Niemen to the Carpathians. In Asia they cover the immense basin of the Obi, and the equally large continental or internal basin of the Caspian. To the W. and S. of the great belt above referred to, they occupy, in whole or in part, the basins of all the great rivers, as the Danube, Po, Ebro, Tagus, Garonne, Loire, Seine, and Thames—the last two including the celebrated Paris and London basins. The other localities where the Tertiaries prevail must be learned by inspecting a good geological map, as no description can convey an accurate impression of their actual position and extent. Such inspection cannot fail to result in the conviction, that central and southern Europe remained submerged under the ocean for many ages after the northern portion existed as dry land, and that during those ages the Black Sea and Caspian were united.

18. **Minerals.**—The mineral treasures of Europe are of the highest importance, not so much on account of the precious metals—in which it is inferior to other continents—as for the abundance and utility of its more common minerals. Our limits will only allow us to specify the principal localities where the most important minerals occur.

Metals.—*Gold* is chiefly found in the Ural and Carpathian Mountains, (where more gold is obtained than in all the rest of Europe), especially at Kremnitz in Hungary, and in the Russian governments of Perm and Orenburg, where, in 1846, the mines yielded 72,000 lb., worth 3½ millions sterling. Other localities are, Transylvania, Salzburg, Piedmont, and the sands of the Danube, Rhine, Rhone, Garonne, Tagus, and other rivers.

Silver: British Isles (Cornwall, &c.), Germany, Hungary, Norway, Bohemia, Transylvania, Turkey.

Copper: Cornwall, Devonshire, Anglesea, Cork and Waterford in Ireland, Ural Mountains, Hungary, Styria, Norway, Prussia, Andalucia, Pyrenees, and Chessy, near Lyon.

Tin: Cornwall, Devonshire, Saxony, Bohemia.

Lead: Leadhills in Scotland, Cornwall, the Sierra Nevada, and the Eastern Alps.

Zinc: Nowhere plentiful, but chiefly found in the Riesengebirge.

Cobalt: In Germany almost exclusively.

Antimony and Bismuth: Rare, but chiefly in Germany.

Arsenic: Schemnitz, in the Carpathians.

Iron: Widely distributed, and generally wherever the coal-measures are found; but most abundant in Great Britain, the Cevennes, Vosges, Jura, Eastern Alps, Mountains of Norway, the Riesengebirge.

Precious Stones.—Diamonds in the Government of Perm; jasper, chalcedony, agate, in Scotland and Germany; topaz in the Urals, Scotland, England, Bohemia, and Saxony; the opal in Hungary; rubies in France; garnets in Scotland.

Inflammable Minerals.—*Coal:* Generally wherever the Upper Palæozoic strata are found, especially in England, the S. of Scotland, Ireland, Belgium and N. of France, Germany, Prussia, Austria, S. of Russia.

Sulphur: In volcanic regions, as the Solfataras of Naples, Sicily, Iceland; also in Switzerland, Poland, &c.

Amber: On the Prussian shores of the Baltic almost exclusively.

Petroleum: Italy, as Modena, Parma, &c.

Mineral Salts.—Cheshire and other parts of England, Germany, Hungary, Poland, Spain, Moldavia. *Brine Springs* very numerous in localities where Secondary strata prevail; Epsom Salts at Epsom in England; Borax, in Hungary; Nitre or Saltpetre in Spain, Naples, Hungary, and Russia; Alum in the crystalline rocks of Sweden, Norway, Britain, and in the volcanic formations of Sicily, Lipari Islands, and the Azores.

19. **Botany.**—The flora of Europe does not probably contain a single indigenous plant peculiar to itself. This striking fact is sufficiently accounted for by its geographical position: for not only is it in close proximity to Northern Africa, but the entire continent is a mere prolongation of Western Asia. Of the twenty-five Phyto-geographic Regions into which Schouw divides the vegetation of the globe (*see* p. 55), Europe embraces a portion of the first three—viz. the Arctic-Alpine, the North European and North Asiatic, and the Mediterranean Regions.

The **Arctic-Alpine Region**, which is also called the region of *Mosses and Saxifrages*, naturally divides itself into two provinces: the first embracing the north polar lands of Europe, Asia, and America, between the limits of ice and the region of trees; and the second, all the higher elevations of Europe and Asia south of the polar circle, and extending in like manner from the line of perpetual congelation to the first appearance of trees. Both provinces are characterised by a profusion of lichens, mosses, and saxifrages, which extend to the snow-line; by the total absence of trees properly so called,—though numerous shrubs, especially the willow and dwarf-birch, make their appearance in the polar province, and junipers, alders, willows, rhododendrons, whortleberries, and cranberries, in the Alpine province. Dwarf perennial herbs, with large flowers of bright colours, are also abundant; but annual plants are rare, and tropical families are wholly wanting. The mean annual temperature of the polar province is 2° — 41° Fahr., and of the Arctic 21° — 37° Fahr., and hence cultivation is impossible in either.

The **North European and North Asiatic Region**, also called the region of the *Umbelliferæ* (mean temp. 29° — 46° Fahr.), embraces the wide space between the Arctic Circle and lat. 45°—or the Mild and Cool Zones described in par. 16, p. 83—being the whole of Europe and Asia north of the Pyrenees, Alps, Black Sea, Caucasus, and Altai Mountains, not included in the former region. It is characterised by the prevalence of the natural orders Umbelliferæ, Cruciferæ, Gramineæ, Cariceæ, Fungi, and Cichoraceæ. The predominant trees are the Coniferæ and Amentaceæ, or the cone-bearing and catkin-bearing families, as fir-trees of various species, yew and cypress, willow, poplar, hazel, birch, plane, alder, oak, and beech; the pastures are luxuriant, and the forest trees lose their foliage in winter.

The **Mediterranean Region**, or region of the *Labiatæ and Caryophylleæ* (mean temp. 55°—73° Fahr.), embraces all the remainder of Europe, together with Asia Minor, Syria, and Africa north of the Sahara, the Azores, and Canaries. It is specially marked by the predominance of the orders Labiatæ and Caryophyllæ; by some representatives of tropical climes, as palms, terebinths, and laurels;

by many evergreen trees and shrubs; by the families of the second region becoming less numerous, their place being occupied by a greater number of woody plants; and by the existence of a winter flora. The pastures, however, are less luxuriant than in the former region, and interspersed with copses of the heath tribe.

Among FOOD PLANTS the cereals are cultivated 20° farther N. in Europe than in America; their northern limit being nearly coincident with that of the Cool Zone described under the article *Climate*. Seven distinct species are cultivated, each of which requires a climate peculiar to itself; but the zones of territory occupied by them merge into one another like the seven colours of the rainbow, and, like the latter, preserve the same invariable sequence. Beginning at the N., the order is as follows:—Barley, rye, oats, wheat, millet, maize, and rice; the four last of which extend southward to the tropical regions. No species of grain can be brought to maturity in Iceland; but barley will grow in the Faröe Isles, and on the continent as far north as Hammerfest and the mouth of the White Sea. Rye is largely cultivated in the N. of Europe, especially in Russia, Germany, and part of France, where it forms the principal food of the people; and it is estimated that it sustains one-third of the population of Europe. Oats are extensively cultivated in Scotland, Norway, Sweden, Russia, and other places between the lat. of Paris and 65° N. Wheat extends over a very wide area,—from lat. 64° in Norway to the tropic of Capricorn; in Great Britain it is grown with advantage as far north as the Moray Firth; millet is grown in Bretagne, Tuscany, and a few other localities S. of lat. 45° — 47°; maize in Eastern and Southern Europe, especially Hungary, Spain, and Northern Italy. Few European countries afford the requisite heat and moisture for the successful cultivation of rice; but it is grown in Spain, Greece, and Italy. Of other food-plants grown in Europe, the principal are the potato, cabbage, turnip, buckwheat, the sweet potato, and the various leguminous plants, as pease, beans, lentils, and carobs or St John's bread. The potato can be raised at a considerably higher latitude than any of the cereals, and it forms the highly-relished food of millions of the people from Iceland to Greece.

FRUIT TREES are numerous, especially to the S. of the Alps and Pyrenees. The vine extends N. to lat. 50° — 53°, but the best wines are produced between 30° and 45°. Farther north its place is in a great measure supplied by the various kinds of orchard fruits, as apples, pears, cherries, plums, and walnuts; and in still higher latitudes by the gooseberry, currant, rasp,'and strawberry, and by malt liquors. The principal fruit-trees—figs, almonds, pomegranates, olives, lemons, oranges, peaches, apricots, mulberries, citrons, stone-pines, and date-palms—are confined to the Warm Zone (par. 16, p. 83).

20. **Zoology.**—In the same way as the plants of the globe have been arranged into twenty-five botanical regions, three of which embrace the vegetation of Europe, so also the animals of the globe are arranged into six zoological kingdoms, and subdivided into fourteen provinces, of which one kingdom, including three provinces, embraces all the animals belonging to this continent. The three zoological provinces referred to are the Northern, the Middle, and the Southern, the respective limits of which harmonise pretty closely with those of the three

botanical regions described above. The Isotherm of 41° divides the Northern from the Central province, and the latter is separated from the Southern by the Pyrenees and Alps.

The following table presents a synopsis of the Fauna of Europe as presently known—its Mammals, Birds, and Reptiles—the first column in each showing the name of the order; the second, the total number of species; the third, the total European species; the fourth, fifth, and sixth, the numbers found in the Northern, Central, and Southern provinces respectively.

ORDERS.	Total Number of Species.	Total European Spec.	N.	C.	S.
EUROPEAN MAMMALS.					
Quadrumana (Four-handed), ...	202	1	...	...	1
Carnivora (Flesh-eating), ...	528	119	41	46	42
Marsupialia (Pouched Animals), . .	123	...	...	...	...
Rodentia (Gnawing Animals), . . .	604	61	...	...	...
Edentata (Toothless Animals), . .	28	...	...	...	...
Pachydermata (Thick-skinned), . .	39	1	...	1	1
Ruminantia (Ruminating), . . .	180	17	...	...	...
Cetacea (Ocean-living), ...	75	24	...	...	...
Total number of Species, . .	1779	223	...	...	...
EUROPEAN BIRDS.					
Rapaces (Birds of Prey), ...	...	54	28	37	41
Scansores (Climbers), ...	...	23	12	14	21
Oscines (Songsters), ...	...	186	70	122	120
Gallinaceæ (Gallinaceous Birds), . .	...	28	6	21	21
Grallatores (Waders), ...	...	87	32	57	54
Natatores (Swimmers), ...	...	112	64	54	37
Total number of Species, . .	6226	490	212	305	294
EUROPEAN REPTILES.					
Testudines (Tortoises), ...	69	6	...	2	5
Sauria (Lizards), ...	203	29	2	12	20
Ophidia (Serpents), ...	265	15	3	8	15
Batrachia (Frogs), ...	120	23	5	9	11
Total number of Species, . .	657	73	10	31	51

Mammals.—It will be seen from the above that while the entire number of European MAMMALS is comparatively small, two orders—the POUCHED and TOOTHLESS—are entirely absent; while other two are each represented by one solitary species — viz. the *Barbary Ape*, a QUADRUMANOUS animal inhabiting the rock of Gibraltar, and the wild boar, a denizen of Central and Southern Europe. Of the remaining orders, that of the CARNIVORA is by far the most important, not merely on account of the great number of species it contains, but also because most of them are hostile to man, and have in all ages been the objects of his pursuit,—either on account of the dangers to which they subject him, or the commercial value of their skins and other products. The order is represented in Europe by five families, the names and principal species of which are the following:—The *Cheiroptera*, or bat family, including the common, the horse-shoe, and the bull-dog bat. The *Insectivora;* as hedgehogs, shrews, desmans, and moles. The *Plantigrada;* as bears, badgers, and gluttons. The *Digitigrada;* as polecat, ermine, weasel, and beech-marten; dog, wolf, fox, jackal, and the civet, in the south of France and in Turkey; the lynx and wildcat: (the lion and tiger are nowhere found in Europe). The *Pinnipedia or Amphibia;* as the otter, common seal, and walrus. The RODENTIA embrace squirrels, beavers; rat, mouse, dormouse, hamster, mole, water-rat, vole, and lemming; porcupine; hare, rabbit, and the pigmy lagomys. The RUMINANTIA are represented by the camel, deer, rein-deer, elk, antelope, rock-goat, wild sheep, and buffalo. The CETACEA include the common Greenland whale, the great northern rorqual, the lesser rorqual, the spermaceti whale, the high-finned cachelot, narwhal, sea-unicorn, beluga, deductor, porpoise, and common grampus.

Birds.—Europe contains a greater number of birds than any other zoological kingdom, with the exception of tropical America. The following are the principal species in each of the six orders: BIRDS OF PREY comprise vultures, hawks, and owls. The CLIMBERS include swifts, goatsuckers, cuckoos, woodpeckers, kingfishers, and hoopoes. The SONGSTERS: nightingale, blackbird, thrush, linnet, and goldfinch. The GALLINACEOUS BIRDS: pigeon, capercailzie, red-grouse (the only species of bird peculiar to the British Isles), ptarmigan, partridge, and pheasant. WADING BIRDS: storks, herons, snipes, plovers, cranes, rails, bustards, runners, and flamingoes. SWIMMERS: duck, swan, goose, grebe, loon, auk, tern.

Reptiles.—European reptiles are all of insignificant size as compared with the gigantic crocodiles, alligators, and boas of the other zoological provinces. Only six species of TORTOISE are found in Europe, and these are nearly confined to the islands of the Mediterranean; but the marsh tortoise is found as far north as the middle of Germany, the leathery tortoise on both sides of the English Channel, and the hawk's-bill turtle, according to Dr Fleming, in Shetland. European LIZARDS comprise the chameleon, gecko, iguana, true lizard, and skink—the last two of which are found in the British Isles. European SERPENTS are very few in number, being only $\frac{1}{18}$ of all known species, and include only two venomous species, both of which belong to the genus viper. All the really formidable species are unknown in this continent. There are twenty-three species of FROGS, of which eight are found in the British Isles. They are found in higher latitudes than any other order of reptiles, extending as far north as the head of the Gulf of Bothnia. The European species comprise true frogs, tritons, newts, and one species of proteus.

21. Ethnography.—I. RACES.—The people of Europe belong to two distinct Races—the Caucasian and the Mongolian.

The **Caucasian Race**, which is by far the most numerous, derives its name from the region of the Caucasus and Armenia, the ancient centre from which all the existing varieties of men have sprung. This region is situated in the centre of the Old World and in the North Temperate Zone; is surrounded by the Black Sea, the Caspian, the Red Sea, and Mediterranean; is connected by its noble rivers with the Persian Gulf and Indian Ocean; enjoys a climate of rare salubrity, a soil of great richness, and a vegetation of almost unrivalled luxuriance. Its inhabitants have ever constituted the highest type of humanity, and near it were located all the most illustrious nations of ancient and modern times. The Caucasian race now extends from Iceland and the Atlantic to the Ganges and Brahmapootra, and from the Arctic Circle to the Tropic of Cancer: it embraces Europe, South-Western Asia, and the North of Africa, and comprehends the greater part of the posterity of Japheth and Shem.

The **Mongolian Race** consists of the remaining tribes of the two great families now mentioned; they people all the remainder of Asia, together with certain isolated localities of Europe, which they entered at a much later period, and generally in the character of wandering hordes. The following are the principal Mongolian tribes that belong to this continent:—The FINNS (including the Finns Proper, Lapps, Quänians, Esthonians, Woguls, Permians, Tchuwasches, Mordwins, and Tcheremesses), extending from the Ural Mountains to the Gulf of Bothnia and the river Niemen; the SAMOIEDES between the White Sea and the river Kara; the MAGYARS or Hungarians in Hungary, allied in form and language to the Finns; the TARTARS, inhabiting the region north of the Black Sea and river Kuban; the KALMUCKS, north of Mount Caucasus, and between the mouths of the Volga and Don; and the TURKS, in Rumelia, who form a connecting-link between the Mongolian and Caucasian races, more closely allied to the Tartar branch in appearance, but to the Caucasians in language.

II. LANGUAGES.—All the languages presently spoken in Europe belong to two great families—the Indo-European and Finno-Tartarian. Nations belonging to the Caucasian race speak the former, those of Mongolian origin the latter. The Indo-European tongues spoken in Europe are subdivided into four groups or classes—viz. the Celtic, in the W.; the Teutonic, in the N. and N.W.; the Greco-Latin, in the S.; and the Sclavonic, in the centre and E. All these, together with the remaining branches of the Indo-European family presently spoken in Asia, are derived from the Sanscrit, an ancient, copious, and highly-refined language, spoken at a very remote period by a Japhetic nation who invaded India from the north-west, driving the original inhabitants either to the extreme south of the peninsula, or to the mountain fastnesses of the interior, where they continue to speak their original barbarous tongues. The original seat of these invaders has not been definitely ascertained; but a kindred tribe, who spoke the closely allied Zend language, were the earliest inhabitants of Bactria (*Persia*); and both were probably nearly allied to the ancestors of the Celts, Teutons, Sclaves, and Hellenes, who, before the dawn of history, penetrated into Europe in separate bodies and at diverse times, thus originating the four groups of languages above enumerated. All these languages are pollysyllabic, highly inflexional, systematically refined, copious in their vocabulary, phonetic (not ideographic) when written, are read from left to right, and bear many other indications of a common origin.

Celtic Languages.—Of the four groups now enumerated, the Celtic appears to be the most ancient. It differs very considerably from the Sanscrit, and more from each of the other three groups than they differ from each other. Celtic nations formed the vanguard of the great Japhetic army that, before the dawn of history, migrated westward, and became the earliest inhabitants of Europe. For the most part they entered that continent on the north side of the Mediterranean; ascended the Danube and Save; settled in Illyria, the Tyrol, Switzerland, Belgium, France, and the British Isles; though some of their number migrated westward, along the south side of the Mediterranean, and entered Spain by the Strait of Gibraltar. This migration occupied many centuries, and before it was concluded the main body became divided into two great sections (the *Gael* and the *Kymri*), who, in the course of ages, came to speak languages unintelligible to each other, though closely allied both glossarially and grammatically. These are the Gaelic and the Kymric; each of which, in the course of time, branched off into three dialects, as shown in the following

TABLE OF CELTIC LANGUAGES.

Gaelic or *Erse Branch,* including
    Irish, spoken in Ireland.
    Scottish Gaelic, in North and West of Scotland.
    Manx, in Isle of Man.
Kymric Branch, or *Ancient British:*
    Welsh, in the principality of Wales.
    Cornish, in Cornwall (now extinct).
    Breton or Armoric, in Bretagne.

Ancient Localities.—Though the Celtic languages are now confined to the British Isles and the north-western corner of France, they were spoken at one time over a large portion of Europe. At the commencement of the Christian era, Celtic and Gothic nations divided all Western Europe between them; and were separated from each other by the Rhine, which still, in a great measure, forms the boundary between the races, though not between the languages. For a lengthened period both branches of the Celtic have been disappearing before the more highly cultivated English and French. Yet they are highly expressive and euphonious tongues; they come down to us as monuments of the most remote antiquity, and of late have become objects of the deepest interest to philologists, who discover in them most precious materials for illustrating the science of comparative grammar. From five to six millions of persons presently speak dialects of Celtic—viz. Irish, 3,000,000 at home, and 1,000,000 abroad; Scottish Gaelic, 400,000 in Scotland, and 100,000 in the colonies; Welsh, 700,000 in Wales, and 50,000 in the cities of England; Armoric, 800,000 in France.

Physiological Character.—The pure Celt is of middle size and slender make; sallow complexion; black hair, rarely curled, but turning grey at an early age; dark-brown eyes; face and upper part of the skull oval; chest narrow; legs slightly curved inwards; feet small; temperament bilious, or bilious-nervous.

Intellectual and Moral Character.—Quick in perception, with great powers of combination and application; sensitive, proud, irascible, but easily calmed; fond of equality, society, and military glory; polite, hospitable, superstitious; want of caution and providence.

Teutonic Languages.—These have all a close resemblance to each other, both in their roots and inflexions, and are intimately allied to the Sanscrit. Anciently they were highly inflexional, like the Greco-Latin family, but now employ auxiliaries for the conjugation of verbs and prepositions for the inflexion of nouns. Though not so plastic as the Greek, or even the Sclavonic tongues, they are bold, vigorous, and capable of expressing all shades of thought. Possessed of indomitable energy and force of character, the Teutonic nations either subjugated or extirpated such Celtic tribes as they came in contact with. In the fourth century they overthrew the great Roman Empire, and they have almost invariably been able to retain possession of the territories they have once acquired. Their deep and patient reflection has led to the most important inventions and sublimest discoveries of modern times, as the watch, gun, steam-engine, art of printing, and the law of gravitation; and to this race belong the brightest names of modern science and literature, as Newton, Milton, Shakespeare, Bacon, Luther, Goethe, Humboldt, and Liebig. The Teutonic languages, like the Celtic, branch off into two main sections.

TABLE OF TEUTONIC LANGUAGES.

German Branch, including
- German, in Germany, Prussia, Austria, and Switzerland.
- Dutch, in the Netherlands.
- Flemish, in the North of Belgium.
- English, in British Isles, British Colonies, and United States.
- Scotch in Lowlands of Scotland.

Scandinavian Branch, including
- Icelandic, in Iceland.
- Faröese, in the Faröe Isles.
- Danish, in Norway and Denmark.
- Swedish, in Sweden.

Extinct Languages of this Class.—Gothic, Alemannic, Old Saxon, and Anglo-Saxon, the last of which is the parent and basis of the modern English.

Ancient Localities.—Germany, between the Rhine and Elbe; the southern part of Scandinavia; Bulgaria and Servia. The Teutonic tribes that most distinguished themselves in the Middle Ages were, the Franks, Burgundians, Alemans, and Visi-Goths, in Gaul; Goths, Longobards, and Heruli, in Italy; Vandals and Ostro-Goths, in Spain.

Physiological Character.—Above middle size, and disposed to corpulency; chest broad; bones thick; legs straight; feet often large and clumsy; great strength of muscle; fair complexion, with flaxen, reddish, or golden-coloured hair, commonly not curled; large blue eyes; ruddy cheeks; broad, high brow; skull larger and rounder than the Celtic variety, and more semicircular than oval; temperament sanguine and phlegmatic.

Intellectual and Moral Character.—Slow but accurate in perception; great depth and penetration of mind, but not so sparkling and brilliant as the Celt; want of concentrativeness; strong desire for personal independence and political self-government; cautious, reserved, and provident: hospitable, but not very sociable; fond of titles and social distinctions; overbearing, haughty disposition, and reckless of the rights of other nations; sincerity; forgetfulness of received injuries; skilful seamen; fond of spirituous liquors; great musical talent.

Sclavonic Languages.—This family of languages belongs to the centre and east of Europe. With the exception of Hungary, Moldavia, and Wallachia, they extend without interruption from the Black Sea to the Baltic, and from the Adriatic to the Yenisei; they occupy more than a third part of Europe, and are spoken by about 60,000,000 of people. Though not *immediately* derived from the Sanscrit, they bear to it a very close affinity, and resemble it more nearly than any other Indo-European family, except the Greco-Latin and Indian branches. They are distinguished by the richness of their vocabulary, by their great abundance of synonymes, and by their numerous inflexions, which are placed both at the beginning and end of words. The last-mentioned property imparts to them a great facility of creating from each radical an extraordinary number of derivatives: from native roots they easily form all those technical and scientific terms which the languages of Western Europe derive from the Greek and Latin. In the number of their declensions, tenses, and participles, they excel all other European languages; and they possess such expressiveness and energy that they are capable of representing every object of the imagination in a manner not inferior to the most highly-cultivated modern tongues. The inferior estimate usually formed of their euphony and sonorousness mainly arises from the attempt to express in Roman letters sounds that are wholly peculiar to the Sclavonic languages. Like the two former families, the Sclavonic tongues are arranged under two branches.

TABLE OF SCLAVONIC LANGUAGES.

South-Eastern Branch, including

Russian, in the great plain of North-Eastern Europe.
Russniak, in Galicia, Hungary, Volhynia, Podolia.

South-Eastern Branch (continued):

Bulgarian,
Servian,
Dalmatian,
Croatian,
Bosnian,
In the basin of the Lower Danube, and on the Drave and Save.
Wendish, middle of Lower Germany.

North-Western Branch:

Polish, in Poland, on the Vistula and Niemen.
Bohemian, or Tchekhian, in Bohemia and Moravia.
Slowak, chiefly in the north-west of Hungary.
Lettish, on the Baltic coast, between the Niemen and Lake Peïpus.
Lithuanian, in Wilna, Grodno, Minsk, and Smolensk.

Ancient Localities.—The early history of the Sclavic nations is involved in much obscurity. They probably left the banks of the Ganges in the seventh or eighth century before the Christian era. The early Greek and Roman historians frequently mention them under the names of *Slavi*, *Antæ*, *Vandals*, *Veneti*, and *Vends*, all of whom were descendants of the ancient Sarmatæ. In the sixth century of our era they began to ascend the basin of the Danube, and to form settlements on both sides of that river: since then they are frequently mentioned by the Byzantine historians as performing an important part in European history.

Physiological Character.—In stature stout, broad, and squat-built; neck thick and short; hardy in constitution, with strong bones and straight muscular limbs; complexion sallow, forming a mean between the Gothic and Celtic races; eyes grey or hazel-brown, and deeply set in the head; hair bristly, dark of different shades, and rarely curled; skull and face square and angular; cheek-bones prominent; brow low, and the hair growing far down on it; temperament phlegmatic, or sanguine-bilious.

Intellectual and Moral Character.—Great mechanical, musical, and imitative talent; frank and open when in the enjoyment of freedom, but cunning, deceitful, and revengeful when subjected; their statesmen become admirable diplomatists; originally leading a nomadic life, they are still attached to the patriarchal form of government; blindly obedient to their sovereign, who is regarded as both father and God; extremely tenacious of the manners and prejudices of their ancestors. They are further characterised by a want of cleanliness; by their love of lyrical, and especially elegiac song; and above all by their invincible hatred of the Teutonic race, who have oppressed them for a thousand years, as well as by their long-cherished aspirations after Pansclavism.

Greco-Latin Languages.—These comprehend all the languages derived from the ancient classical tongues of Greece and Rome. They are spoken over the entire south of Europe, from the Atlantic to the Dniester, and from the southern limits of Germany to the Mediterranean, with the exception of the northern portion of the Hellenic peninsula, the Basque Provinces in the north of Spain, and the old province of Bretagne in France. All the larger islands of the Mediterranean, except Malta, are peopled by nations speaking Greco-Latin tongues.

The origin of the Greeks and Latins, in common with that of the Celts, Goths, and Sclaves, is lost in the darkness of the pre-historic period. Modern ethnographic science, however, leaves little doubt that the two nations referred to were, respectively, the earliest inhabitants of Greece and Italy; that they stood to each other in the closest affinity, both of them being the immediate descendants of the Pelasgi, who formed the first great wave of population that broke on the shores of south-eastern Europe, and that permanently covered Asia Minor, Thrace, Macedonia, Greece, and Italy. This immigration probably took place about 2000 B.C.; but was succeeded by numerous similar immigrations of the same stock of nations (including the Hellenes, who were no doubt nearly allied to, if not identical with, the Pelasgi) down to 1350 B.C. Simultaneously with the Pelasgi other great bodies of colonists appear to have entered Europe from other parts of Asia, forming the ancestors of the Celtic, Teutonic, and Sclavonic nations; but the Pelasgi formed, from the very first, the great bulk of the population of Italy and Greece. The part of Asia from which the Pelasgi set out appears to have been Northern India; for the Sanscrit, the ancient and sacred language of India, has a marked and very decided affinity to both Greek and Latin. The Greek, especially, is more closely allied to the Sanscrit than any other European tongue. In some respects, however, the Latin surpasses the Greek in retaining the features of its venerable parent, and it is in no way to be regarded as a descendant, far less a corruption, of the language of Greece. They are sister-tongues, deriving from their common parent every feature in which they resemble each other; but exhibiting many differences, arising from the different fortunes of each.*

Table of the Greco-Latin Languages.

Greek, or Eastern Branch:
- Ancient Greek—Spoken in Greece from the earliest times, and afterwards in numerous other countries.
- Modern Greek or Romaic—Greece, the Archipelago, and parts of the Turkish Empire.

Latin, or Western Branch:
- Ancient Latin—Now a dead language, was the original language of Italy, and afterwards spread over the greater part of the Roman Empire.
- Italian—Italy, part of Switzerland, the Italian Islands, or Corsica, Sardinia, Sicily, &c.
- Spanish—Spain, Balearic Isles, *Mexico*, &c.
- Portuguese—Portugal, Madeira, Azores, *Brazil.*
- French—France, Channel Isles, parts of Belgium and Switzerland, *Lower Canada, Louisiana*, &c.
- Wallachian—Wallachia, Moldavia, Bessarabia, Transylvania.

Thraco-Illyrian Branch—viz.:
- Albanian or Arnaute—The eastern coast of the Adriatic, especially Albania, Servia, and Dalmatia: but of doubtful position here.

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* For the precise relation in which the two ancient classical tongues stand to each other, we may refer to Bopp's *Comparative Grammar of the Indo-European Languages;* to Latham, *On the English Language;* and (what is more interesting and satisfactory than either) to the article "Language" in the *Penny Cyclopædia*, vol. xiii. p. 304, where all the languages of this family are treated of and compared in a very masterly manner.

Ancient Localities.—No other language, ancient or modern, has been so widely diffused as the Greek, except Arabic and English. Greece, Asia Minor, Macedonia, Thessaly, and Epirus were its earliest seats: it was diffused by the early Greek colonies along both sides of the Mediterranean, as Cyrene, Syracuse, Tarentum, and Smyrna; was extended by Alexander and his successors to a large portion of Western Asia, including Asia Minor, Syria, and the cities of Palestine; and was spoken in many parts of Egypt under the Ptolemies. The conquest of Greece by the Romans, B.C. 146, tended still further to its diffusion, while under the Cæsars it was more extensively cultivated than at any former time. After the fall of the Western Empire, and the extinction of learning in the West, Greek literature and philosophy found an asylum in Constantinople, till that city was taken by the Turks, A.D. 1453; at which time it ceased to be spoken in its purity anywhere. It still, however, remained a living language in its original home; and even to this day the modern Greeks can peruse with ease the productions of Homer, Xenophon, and Demosthenes. In short, it has remained a living language for the astonishing period of 3000 years.

The Latin, in like manner, was the principal language of Italy from the earliest times. As the Roman power extended, it became more and more widely diffused, in many cases mingling with and remoulding the dialects of the conquered nations, and thus originating the modern languages of Southern Europe. After the fall of the Roman Empire it ceased to be a spoken language, but during the lengthened period of the middle ages it continued to maintain its supremacy as the language of literature, philosophy, legislation, and religion. Since the establishment of the papal hierarchy to the present day, it has maintained its place as the liturgical language of the Romish Church; and it is still extensively cultivated by every civilised nation, on account of the treasures contained in the vast repositories of its literature.

Modern Languages belonging to this Stock.—The Romaic differs little more from ancient Greek than some of the dialects of that language differed from each other; and the changes that have arisen are more perceptible in the grammar than in the vocabulary.

The main differences now existing between the various languages of the Roman branch arise from the different character of the languages spoken in these localities before the Latin was engrafted on the original stock; and still more from the widely different nations which, at various times, mingled with the original Celtic population of these countries. Thus, in the fifth century, Gaul passed into the hands of Teutonic nations; Spain, where Latin had been spoken in considerable purity, was overrun by the Goths, who introduced many Teutonic elements, and subsequently by the Moors, who spoke Arabic. Italian, Spanish, and French have diverged from the parent stem far more widely than the Romaic from the ancient Greek. The French has effected the widest separation, and the Italian and Spanish the least; while the Portuguese may be regarded as almost a *dialect* of the Spanish, the two languages being radically identical. Though the basis of the Wallachian is altered Latin, about one-half of its words are derived from Greek, Turkish, and Sclavonian sources.

The Albanian, or third branch, is so different from every other member of this family that it seems doubtful whether it can claim a place among them. It contains the remains of a language now long extinct, but which probably formed a connecting-link between various families of tongues, more especially between the Greco-Latin and Sclavonic.

III. Religions of Europe.—These, though extremely numerous, may all be reduced to three classes, which harmonise in a very remarkable manner with the races and groups of languages above described. The Caucasian race are Christians; the Mongolian race, Heathens; while the Turks, who form a connecting-link between these races, profess Mohammedanism—a religion which equally connects Christianity with Paganism. A similar generalisation arises when the various forms of their religion are compared with their *languages.* The Teutonic nations have embraced Protestantism—that is, Christianity reformed from the abuses of centuries; the Celtic and Greco-Latin nations profess Romanism, the most corrupt of all the forms of Christianity; while those speaking Sclavonic tongues belong to the Greek Church.

To the latter generalisation, however, there are some important exceptions; because language does not strike so deeply into the roots of humanity as race does. Language shares in the fortunes of the nation that speaks it, and is subject to numberless vicissitudes; while the stamp derived from race remains indelible for ages. Accordingly we find considerable sections of the Celtic nations becoming Protestants, as the Scottish Gael and the Welsh; Austria, though speaking a Teutonic language, largely professes Romanism; the Magyars, a Mongolian race, and speaking a Mongolian language, are to a large extent Protestants; and the inhabitants of Greece, instead of belonging to the Romish, are stanch adherents of the Greek Church—a form of religion, however, which differs in no essential point from Catholicism.

The following table shows the estimated numbers belonging at present to the different religious denominations of Europe:—

Religion.	No. of Adherents.
Roman Catholics, ...	128,000,000
Greek Church,	64,000,000
Protestants, . . .	62,000,000
Mohammedans and Heathens,	8,000,000
Jews, ...	2,000,000
Gypsies and others, not accounted for,	1,400,000
Total population of Europe, .	265,400,000

THE BRITISH EMPIRE.

The British Empire is the largest, the most powerful, and, with one exception, the most populous on the surface of the earth. In extent of territory it even exceeds the Russian Empire; in point of population it is second only to the Chinese; while in wealth, civilisation, and moral influence, it has no rival. Its magnitude, however, will be more easily realised by comparing it in a tabular view with the other largest states in both hemispheres.

TABLE OF LARGEST EMPIRES.

Name.	Area in Square Miles.	Population at last Census.
Russian Empire,......................	8,017,653	65,237,437
Chinese Empire,......................	5,393,000	404,600,000
United States,.........................	3,260,000	23,191,876
Brazilian Empire,....................	3,956,000	7,677,800
British Empire,......................	8,503,960	208,810,645

The following Table, which has been carefully drawn up from the most recent statistics, exhibits the names, capitals, areas, and populations of the various sections of this great empire.

TABLE OF BRITISH POSSESSIONS.

Name.	Capital.	Area in Eng. Square Miles.	Population at last Census.
EUROPE.			
British Isles,...............	London	122,550	27,452,262
Heligoland,.................		5	2,230
Gibraltar,..................		1	15,000
Malta, Gozo, & Comino,	Valetta	138	128,361
Ionian Isles,................	Corfu	1,096	230,500

TABLE OF BRITISH POSSESSIONS—*Continued.*

Name.	Capital.	Area in Eng. Square Miles.	Population at last Census.
AFRICA.			
Gambia,	Bathurst	19	4,851
Sierra Leone,	Freetown	300	55,000
Gold-Coast Possessions,		6,000	400,000
Ascension Island,	Georgetown	35	400
St Helena,	Jamestown	48	7,000
Cape Colony, Natal, British Kafraria, &c.	Cape Town	200,000	406,000
Mauritius, Amirantes, and Seychelles,	Port-Louis	800	168,920
ASIA.			
Aden,		3	20,000
British India,	Calcutta	837,412	131,990,901
Protected States (India),		450,791	40,948,735
Ceylon,	Colombo	23,310	1,500,000
Hong-Kong,	Victoria	25	29,547
OCEANIA.			
Labuan and Sarawak,		25	12,000?
Australia,	Sydney	3,000,000	919,917
Tasmania,	Hobart Town	25,000	70,164
New Zealand,	Auckland	100,000	170,000
Auckland Islands,		156	
Norfolk Island,		10	
AMERICA.			
Hudson Bay Territories, including Vancouver Island, British Columbia, and Labrador,	Fort York	3,170,000	105,000
Newfoundland,	St John	36,000	100,000
Canada,	Ottawa	357,800	2,500,000
New Brunswick,	Fredericton	27,700	194,000
Prince Edward Island,	Charlotte Town	2,134	62,678
Nova Scotia and Cape Breton,	Halifax	20,966	311,177
Bermuda,	Hamilton	22	11,000
British Honduras,	Balize	19,200	10,710
West India Islands,	Spanish Town	13,414	820,792
British Guiana,	George Town	76,000	163,000
Falkland Isles,	Stanley Harbour	13,000	500

GENERAL SUMMARY OF BRITISH POSSESSIONS.

Name.	Area.	Population.
Europe,	123,790	27,828,353
Africa,	207,202	1,042,171
Asia,	1,311,541	174,489,183
Oceania,	3,125,191	1,172,081
America,	3,736,236	4,278,857
Total British Empire,	8,503,960	208,810,645

GENERAL VIEW OF THE BRITISH ISLES.

1. **Position and Boundaries.**—The British Isles, or United Kingdom of Great Britain and Ireland, form an extensive archipelago in the North Atlantic Ocean, at a small distance from the western shores of Central Europe, from which it is separated by the North Sea, the Strait of Dover, and the English Channel. It consists of two large islands—Great Britain and Ireland—and of about 5500 smaller islands and rocks. Of these, 500 are contiguous to Great Britain, and 5000 to Ireland. At the date of the last general census, only 420 of them were found inhabited—175 of which were adjacent to Great Britain, and 245 to Ireland.

2. **Form.**—The general outline is very irregular; but omitting the Shetland and Scilly Isles, it approximates to the form of a scalene triangle, with its longest side turned to the east, and its shortest to the south. The group, as a whole, is broken up into a number of smaller ones, which arrange themselves, either singly or in clusters, around the larger islands. Thus, Britain is surrounded by the Orkney and Shetland Isles, the Outer and Inner Hebrides, Bute and Arran, Isle of Man, Anglesea, Scilly Isles, and Isle of Wight; while Ireland is in like manner accompanied by Rathlin Island, Tory Island, Arranmore, Achil Island, Clare Island, South Isles of Arran, Valencia, and Cape Clear. The east coast of Great Britain is singularly destitute of islands; and the arrangement into small clusters is more characteristic of the British than of the Irish islands.

3. **Area and Dimensions.**—Situated between 49° 13′ and 60° 49′ N., and between 1° 45′ E. and 10° 26′ W. lon., the entire archipelago occupies 11½° of lat. and 12¼° of lon. The trapezium formed

by the parallels and meridians that pass through its extreme points is thus 800 miles long, from north to south, with an average breadth of 490 miles. The square content of this trapezium is about 392,000 square miles, but more than two-thirds of it is covered with water; and the actual area of the land is only 122,550 square miles, or $\frac{1}{30}$ of the area of Europe.

Great Britain is the largest island in Europe, and the seventh largest in the world, being only exceeded by Australia, Borneo, Papua, Sumatra, Niphon, and Madagascar. Its length is 608 miles, breadth 280; area 83,826 sq. miles, or, including the adjacent islands, 90,038 sq. miles=56,000,000 imperial acres, or $\frac{1}{43}$ part of Europe. Ireland, length 283 miles, breadth 197; area 32,513 sq. miles = 20,000,000 acres, or about one-third the size of Great Britain.

4. **Extreme Points.**—Unst, in Shetland, is the most northern part of the British archipelago; Jersey, in the Channel Isles, the most southern; Lowestoft Ness, in Norfolk, the most eastern; and Dunmore Head, in Kerry, the most western.

The longest day in Jersey is three hours shorter than in Shetland, where, at the summer solstice, it is 19 hours long. Here a bright twilight continues all night, and books of a small type may be easily read at midnight. The sun rises on the east coast of England 49 minutes earlier than on the west coast of Ireland. Greenwich time, therefore, which is now followed on all the railways of Great Britain, would be greatly at fault if extended to the sister island.

5. **Comparative Position.**—The parallel of latitude which passes through Unst, in the extreme north of the archipelago, proceeds *eastward* through Christiania, Stockholm, St Petersburg, and Yakutsk in Central Siberia; and *westward* across Cape Farewell in Greenland, and Mount St Elias in Russian America: the parallel of Jersey in the extreme south proceeds eastward a few miles to the north of Paris and Vienna, and along the southern limit of Siberia; and westward along the northern boundary of the United States: while the parallel of 55°, which passes through the centre of the archipelago, extends in the one direction to Moscow, and in the other to Nain in Labrador.

The meridian of Lowestoft, in the extreme east of Britain, passes through Paris, Barcelona, and Algiers; that of Dunmore Head, the extreme west of Ireland, runs northward midway between Iceland and the Faröe Isles, and southward 1° west of the coast of Portugal, through Marocco and Siberia, and between the islands of Ascension and St Helena; while the central meridian (of 4° 20′ W.) runs considerably to the east of the Faröe group, through Anglesea and Cornwall, between Brest and Madrid, and 1° east of Gibraltar and St Helena.

6. **Population.**—In the year 1801, when the first accurate census was made, the population of the British Isles amounted to 15,942,646; in 1851 it had increased to 27,724,849—being 229 persons to every square mile of surface; while in 1858 the estimated population was 28,381,659. Thus, while in the United States the population doubles itself in twenty-five years, in the United King-

dom it does not nearly double itself in fifty. This comparatively slow rate of increase arises from various causes, the principal of which are emigration, famine, and disease.

An immense tide of emigration is constantly leaving our shores. In 1852 there emigrated from the British Isles 368,000—or upwards of 1000 per day. Of these, 244,000 went to the United States, 88,000 to Australia, and 33,000 to British America. In 1857 there emigrated 212,875. Since the year 1821, the number of emigrants from the United Kingdom has amounted to 2,685,000; and if this number alone be added to the population of the last census, it will raise it to 30,410,000. But the destruction of the potato crop in 1846-7, and the consequent famine in Ireland and the Highlands of Scotland, had a mighty effect in reducing the population. In Ireland alone it is estimated that 1,000,000 of the people died of famine and disease in two years; and it appears from the last census that the population of that country was one million and a half less than in 1841.

In Great Britain alone the population has more than doubled during the last half-century. In 1801 it was 10,578,000, including the adjacent islands; it is now 20,959,477. This gives 233 persons to every square mile, and $2\frac{7}{10}$ acres of land to every person. This dense population is equally divided between town and country, there being about 10½ millions in each. The number of cities, county towns, and market-towns in the island is 815, of which 580 are in England and Wales, with an average population of 15,500; and 225 in Scotland, with an average population of 6654.

7. **Climate.**—As compared with other countries of the same latitude, the climate of the British Isles, though variable, is remarkably mild and salubrious. There is no country in Europe where a working man can prosecute his employment out of doors for a greater number of days in the year, or of hours in the day. Surrounded by the ocean on all sides, and having a branch of the Gulf Stream flowing along its western shores, the mean annual temperature is greatly higher than its geographical position in the middle of the North Temperate Zone would indicate. Of the six isothermal zones into which the meteorologist divides our hemisphere—viz. the equatorial, warm, mild, cool, cold, and frigid—the United Kingdom is situated in that one which, on the whole, is most desirable.

The *Mild Zone*, which embraces the entire archipelago, is bounded by the isothermal curves of 41° and 59° Fahr., and enjoys a mean annual temperature of 49°. The mean temperature of Unst, in Shetland, is 44°.7, and of Penzance in Cornwall 51°.7; thus showing a difference of mean annual temperature between the two extremities of the archipelago of 7° Fahr., and a general average to the whole of 48°.7.* In no other country, either in the Old or New World, does so high a mean temperature correspond with so high a latitude. For example, Edinburgh, Moscow, and Nain in Labrador, are situated nearly on the same parallel; but while the mean temperature of Edinburgh is 47°.13, at Moscow it is 40°, and at Nain 27°.8. Hence it appears that the British Isles possess a mean temperature of 7° higher than corresponding latitudes on the eastern, and of 20° higher than corresponding latitudes on the western continent. The winter temperature is still more dissimilar, being at Edinburgh 38°.45, at Moscow 15°.2, and at Nain 3°.7. Our winter is therefore 23° Fahr. warmer than at Moscow, and 35° warmer than in the corresponding latitude of the eastern side of North America.

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* The annual mean at Swansea, in South Wales, is indeed 53°.7; but this seems exceptional, and to depend on local causes.

The isotherm of 50°, which nearly expresses the mean annual temperature of the British Isles, in no part of the world attains so high a latitude as in Ireland, where it ascends, in the centre of the island, nearly to the parallel of Dublin, in lat. 53° 20′. From this point it rapidly descends in its passage eastward and westward—in the former, passing near London, 51° 30′, Paris 48° 50′, Vienna 48° 12′, Astrakhan 46° 27′, and Pekin 39° 54′; and in the latter, New York 40° 42′, and the mouth of the Columbia 46°. These places are, on an average, 8½°, and one of them (Pekin) no less than 13½°, farther south than Dublin. So great, indeed, is the influence of our insular situation, of our mild westerly winds, and of the general drainage and cultivation of our soil, that the British Isles are fully as healthy as any country in the world, and our vegetation unrivalled under the same degree of latitude. Not only is our mean temperature very high, but the *range of temperature* is very small; the difference between the temperature of the hottest and coldest months being only about 24°, while at Berlin it is 38°, and at Moscow and St Petersburg no less than 57°. Hence we are exempted from those violent extremes which are so injurious to health and to animal and vegetable life. Accordingly, while in Ireland the broad-leaved myrtle grows in the open air as in Portugal, corn will not ripen in Labrador under the same latitude, and only hardy kitchen vegetables can be raised. Summer, in the British Isles, comprises the months of June, July, and August; autumn, September, October, November, and the first half of December; winter, half of December, January, February, and the half of March; and spring, the latter half of March, April, and May. July is the hottest month.

The **Prevailing Winds** are westerly for nine months of the year; but in March, April, and May they are either easterly or northerly, and this season of the year is peculiarly trying to invalids, especially to those afflicted with consumption. The *average fall of rain* over the entire archipelago is 40 inches, but it is much greater on the west than on the east coast of both Great Britain and Ireland—the mean fall of rain on the east coast of the former being 27.4 inches, and of the latter 29.7 inches; while on the west coast of the larger island it is 45.5, and of the smaller 47.4 inches.

The average *number of rainy days* on the east coast is 165, and on the west, 208. This great difference of climate between the east and west sides arises from the configuration of the land and the general prevalence of westerly winds charged with vapour from the Atlantic. These winds, striking against the colder mountain-ranges, lose their moisture and originate nearly all the principal rivers in both islands. In some parts of Westmoreland and Cumberland, as much as 100 inches of rain fall annually; at Seathwaite, in the latter county, the fall amounts to 146 inches; whereas at London, on the eastern side of the island, it is only 24, at Cambridge 20, Shields 25, Edinburgh 25, and Dublin 30.8 inches.

The mean **Height of the Barometer** is at London 29.88 inches, at Aberdeen 29.65 inches. The range is very great, especially in the north of the archipelago: in Orkney it amounts to 3 inches; and for Scotland, generally, it is no less than 2.82 inches. The *limit of perpetual snow* is estimated to be 6334 feet above the level of the sea in the extreme south of the archipelago, 5034 feet in the centre, and 3818 in the Shetlands. (See under "Scotland," art. "Mountains"). The *variation of the needle* is on the east side 23° W., and on the west side 30° W. At Greenwich Observatory in the year 1852 it was 23° 40′ W.; and in the Firth of Clyde, in 1859, according to Mr Cameron, 26° 35′ W., with a decrease of 4′ to 5′ per annum westerly. The *magnetic inclination, or dip*, is in the south 69°, in the north 73½°; at London, in 1840, it was 68½°, whereas in the year 1670 it was 75½°. The *magnetic force* or *intensity* in the centre of the archipelago is 1.4, at London 1.372, Lima and Madras being 1.

8. **Geology.**—By far the greater part of the surface of the British Isles is occupied by sedimentary and fossiliferous strata, ranging from the Silurian to the Tertiary. Igneous and metamorphic rocks prevail mainly in Scotland—a country which is also characterised by the preponderance of Silurian strata, by the extent and importance of its newer Palæozoic rocks, embracing all the formations from the Devonian to the Permian, and by the absence for the most part of strata belonging to the Mesozoic and Tertiary series.

England, on the other hand, possesses in greatest abundance those formations of which Scotland is most destitute; for while only a small portion of her surface is covered by the older Palæozoic—viz., the north-western and south-western counties—the Secondary formations are widespread and highly developed, as are also the newer Palæozoic strata, to which her unrivalled coal-fields belong. The Chalk and Tertiary series are mainly confined to the south-eastern counties, especially to the basins of the Thames and Ouse. The Oolite, Lias, and Trias occupy nearly all the remainder of the country, especially the north-eastern and central counties from the eastern frontier of Wales to the North Sea; but the north of England, from Derby to Berwick, is covered with the Coal-measures and the Carboniferous Limestone.

Wales consists, for the most part, of Silurian and Devonian strata, but the Coal-measures in the south are extensive and valuable.

A most interesting circumstance connected with the geology of England and Wales, and one which will greatly facilitate the mastering of the details, is the *order* in which the different formations occur, more especially in the broadest part of the kingdom. Supposing a geologist to set out from the Cambrian rocks of the west coast of Pembrokeshire, and to travel eastward till he arrives at the tertiary deposits of Norfolk, he will have passed in review all the systems and formations of the entire fossiliferous series, and that too precisely in the order in which they are arranged in geological treatises, or in which they would be seen were a complete geological section of the earth's crust presented to his view!

The order would be precisely the same should he make another excursion from Berwick to London along the coast, or even in a direct line, save that a few of the lower terms of the series would be wanting. Probably there is no country in the world, of equal extent, in which a similar succession could be found.

Ireland is essentially a Palæozoic country. Carboniferous limestone covers a large portion of the surface, and the Silurian and Devonian the remainder; only that extensive tracts of trap and granite prevail along the coasts—the former covering the entire north-east of Ulster, between the Lagan and Lough Foyle, and the latter the greater part of the counties Wicklow, Carlow, Galway, and Donegal. Coal is found in many places, but the workable beds are of inconsiderable extent, and the quality is commonly inferior. (See under "Minerals.")

The geology of the British Isles presents an admirable epitome of the geology of the globe; and it has been more thoroughly investigated than any other equally extensive portion of the earth's surface. Details, however, would be out of place here; but the prevailing characteristics of the geology of each of the counties will be found briefly indicated in the "Descriptive Notes" to England, Scotland, and Ireland.*

9. **Minerals.**—The minerals of the United Kingdom are a source of immense wealth, and both in quantity and commercial value greatly surpass those of any other country. The chief of these are coal, iron, salt, limestone, building-stones, copper, lead, tin, silver, and zinc.

Almost every mineral, indeed, of high economic value, is found more or less extensively in the British Isles; though some of them, as, for example, gold and quicksilver, occur in such small quantities as not to repay the labour of extracting them. Coal and iron are the two commodities that have contributed most largely to raise our country to the high eminence to which it has attained among neighbouring nations. The coal-fields are not confined to any special locality, but are distributed in all directions over both the main islands. In England they commence at Northumberland, and extend through Durham, York, Lancashire, and Staffordshire, into South Wales. In Scotland they form a broad belt across the country where it is narrowest, from the coast of Ayrshire to Fifeness—extending on the west coast from the Clyde to the Doon, and on the east from the Eden to the Tyne. Detached tracts also occur in the counties of Berwick, Roxburgh, and Dumfries. Ireland is not rich in coal. Her six coal districts are situated in the carboniferous limestone which covers the great central plain, and do not yield more than about 55,000 tons annually.

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* For further details we must refer the student to the works of Sir Roderick Murchison, Sir Charles Lyell, Mr Hugh Miller, and especially to the beautiful "Geological and Palæontological Map of the British Islands," edited by Mr A. Keith Johnston, from materials supplied by the late lamented Professor Edward Forbes, forming Plates V. and VI. of the new edition of Johnston's *Physical Atlas*.

The total area of the Coal-measures in the British Isles is estimated at about 8000 square miles; and it is calculated that, at the present rate of consumption, the supply will last for 2000 years. The value of the coal is immensely enhanced by its being associated with beds of iron ore. The ore could not be fused without the coal, nor without the aid of the mountain-limestone, which acts as a flux and promotes its speedy reduction. In other countries where the coal is not associated with those other deposits—as in Silesia and various parts of France—the value of the mineral is restricted to its employment as an article of fuel.

Salt occurs chiefly in the county of Cheshire, especially along the river Weaver, on both sides of which vast beds of rock-salt and brine-springs occur. Limestone is abundant in almost every part of England and Ireland; sandstone and granite in numerous localities in Scotland; roofing-slate in Wales, Cumberland, and Argyllshire; and excellent statuary marble in Donegal and Galway. Copper is most abundant in Cornwall, but occurs also in Staffordshire, Anglesea, Waterford, Cork, and Kerry. Lead is chiefly found in Derbyshire, Wales, and in the two most northern counties of England; in the Lowther Hills in Scotland; and in the southern counties of Munster. Lead ore generally contains a small quantity of silver. Tin occurs only in Cornwall and Devon, where it has been worked for ages; and these mines supply about $\frac{12}{13}$ of all the tin produced in Europe. Mines of calamine, or zinc ore, are worked in Derbyshire. Antimóny, manganese, arsenic, plumbago, fuller's earth, and numerous other minerals, occur in various parts of the kingdom.

It has been estimated that the value of the mineral productions of the United Kingdom, for the year 1855, has been nearly £33,000,000 sterling, more than two-thirds of which belong to the single article of coal, 66,600,000 tons of which are dug annually. The value of the iron-ore for the same year is estimated at £3,000,000; of copper and lead about £1,500,000 each; of tin, silver, and zinc, collectively, £1,000,000; and of other minerals, including building-stones, about £3,000,000.

10. **Botany.**—The flora of the British Isles is wholly embraced within Schouw's second phyto-geographic region, or the *region of the umbelliferæ*, the limits and characteristics of which have been described above (*see* p. 87).

So closely does the vegetation of these islands resemble that of the neighbouring continent, that, with two or three exceptions, it does not contain a single plant which is not to be found in one or other of the countries beyond the Channel. The exceptions referred to are the three-toothed cinque-foil (*Potentilla tridentata*), the jointed pipewort (*Eriocaulon septangulare*), and a water-weed named *Anacharsis alsinastrum*. Even these are probably not indigenous to the United Kingdom, but appear to have migrated across the Atlantic from the New World. The first-mentioned occurs on a mountain in Forfarshire, but is abundant in the Rocky Mountains and in Arctic America; the second is found in the Hebrides and on the west coast of Ireland, its seeds having been doubtless wafted thither by the Gulf Stream; while the third was first noticed in 1842 in the river Trent, and in the canals of the midland counties—the navigation of which was soon afterwards seriously impeded by it. The last-named plant is independent of a root in the soil, and attains to maturity while floating on the water.

Having thus no species peculiar to themselves, the British Isles cannot be regarded as a "centre of vegetation" (*see* p. 54), but as having been colonised by a succession of vegetable migrations from the continent of Europe. Edward Forbes and others regard these migrations as having commenced as early as the epoch of the middle tertiary formation—when one unbroken continent extended from the Mediterranean to the British shores—and as having been continued till the present time.

Our entire flora may, however, be divided into four groups of plants, corresponding with the continental regions from which they are supposed to have migrated. Thus, we have—1. The *Germanic* group, which forms the grand staple of our vegetation, and embraces our trees, shrubs, weeds, and common wild-flowers, all of which are equally abundant in Germany, the Netherlands, Belgium, and north of France; 2. The *Scandinavian* group, found chiefly in the Highlands of Scotland, and more sparingly in the mountains of Cumberland, Wales, and even of Ireland, consisting of lichens, mosses, grasses, some flowering plants of great beauty, and several berry-bearing shrubs, as the cranberry, bilberry, and cloudberry—plants which are abundant in the mountains of Scandinavia and in the lowland regions of Arctic Europe; 3. The *Armorican* group, in the south-east of Ireland and south-west of England, where the vegetation is closely allied to that of Brittany and Normandy, the ancient Armorica; 4. The *Asturian* group, in the south-west of Ireland, where about twelve species of plants are found which are common in the mountains of northern Spain, though occurring nowhere else in the British Isles, as St Patrick's cabbage (*Saxifraga umbrosa*), the strawberry-tree (*Arbutus unedo*), and various species of heath.

Botanists vary considerably in their estimates of the total number of species belonging to our native flora, owing to the uncertainty that attaches to many species as to whether they are really native, or have been introduced by man. Thus Professor Balfour, in his *Manual of Botany*, published in 1849, considers our indigenous species to amount to 4400, of which 3230 are common to England and Scotland. The number of Flowering Plants is stated at 1600, and of the Non-Flowering or Cryptogamic Plants (embracing *algæ* or *sea-weeds*, *ferns*, *mosses*, *lichens*, and *fungi*) at 2800 species. The *Physical Atlas* gives the number of our flowering plants as 1371, of which 340 are monocotyledons and 1031 dicotyledons; while other authorities estimate the flowering species at 1500, of which 350 are monocotyledons and 1150 dicotyledons. Of the 2000 known species of Ferns, about 60 are found in the British archipelago, and of the 1100 Mosses we have about 300. We have also numerous species of Lichens, Fungi, and Algæ, though the statistics are less precise.

Of *forest trees* acknowledged to be of British origin, the principal are the oak, elm, birch, beech, ash, alder, pine or Scotch fir, poplar, willow, yew, mountain-ash, maple, holly, and hawthorn. Of trees that are known to have been introduced by man from foreign countries may be mentioned the chestnut, lime, walnut, Norwegian spruce, larch, weeping-willow, Lombardy poplar, mulberry, and cedar. Our principal *fruits* are the apple, pear, cherry, plum, peach, walnut, currant, gooseberry, strawberry. The *cereals* are wheat, barley, bigg, oats; while *other cultivated plants* are the potato, turnip, mangold, carrot, radish, beet, cabbage, pease, beans, spinach, hops, flax, hemp, clover, vetches, and rye-grass.

11. **Agriculture.**—British farming has attained to an unrivalled degree of perfection. The general study of agricultural chemistry, and the consequent adoption of the rotation system of crops, has mainly contributed to this result; but the vast number of good roads, canals, and railways that intersect the kingdom in all directions, and enable the agriculturist to convey the produce of his farm to the best market, has also very powerfully contributed to bring about the same result.

Estimating the area of the whole archipelago at 122,550 square miles, or 78,000,000 acres, it is calculated that 20 million acres are under cultivation; 28 million under pasture; 15 million waste but improvable; and 15 million waste and not improvable. Or, still more generally: three-fifths of the soil are already under cultivation of some sort; one-fifth is not capable of cultivation; and the remaining fifth might be cultivated, but is not.

The total quantity of corn of all kinds annually produced, after deducting seed for the following year, is estimated at 54,000,000 quarters; and the annual value of real property, as assessed under the property-tax, is £260,000,000. The breeds of horses, cattle, sheep, and other domestic animals, are all of the best description.

12. **Zoology.**—The fauna of the British Isles is wholly embraced within the Middle Province of the first or European Zoological Kingdom—(*see above*, p. 59). We shall first consider the Vertebrated, and then, more briefly, the Invertebrated animals.

I. THE VERTEBRATA, or Mammals, Birds, Reptiles, and Fishes.

(1.) The **Mammalia** of the United Kingdom are represented by only four orders—viz., the Carnivora, Rodentia, Ruminantia, and Cetacea; the other four being wholly absent—viz., the Quadrumana, Marsupialia, Edentata, and Pachydermata. The last-named order is indeed represented by the horse, ass, and sow; but as they are no longer found here in their wild state, we do not take them into account. The orders actually represented embrace 60 species; but if we deduct the bats and the marine mammals, not more than 40 species will remain—a mere fragment of our mammalian fauna during the epoch of the Boulder Clay, when, in addition to the existing species, these islands contained the elephant, rhinoceros, hippopotamus, tiger, hyæna, the great elk, the gigantic deer, two species of beaver, and three species of bear. Several species, as the beaver, bear, wolf, wild ox, and wild boar, have been extinguished during the historical era by the cutting down of the forests, the cultivation of the soil, and the destructive effects of the chase; while not a few others have become very rare, as the badger, polecat, and squirrel.

The *Carnivora*, or flesh-eating mammals, are represented by the fox, dog, weasel, ermine, foumart, martin, polecat; the hedgehog, mole, shrew, and badger; the otter, seal, and walrus; and by nine species of bat. The badger is not found north of the Caledonian Canal, nor the mole north of the Pentland Firth, or in Ireland. The *Rodentia* embrace the squirrel, hare, rabbit, dormouse, three species of mouse, two of rat, and four of arvicola. The *Ruminantia* are three species of deer—the red, roe, and fallow deer; the ox, goat, and sheep. The *Cetacea*, finally, embrace the porpoise, grampus, sea-cow, and various species of whales and dolphins.

(2.) **Birds**, the next class of vertebrated animals, are comparatively numerous in the British Isles; for while the total number of species belonging to Europe is only 490, no fewer than 274 species are found in the United Kingdom, of which 230 are known in Ireland. Each of the six orders is largely represented. The *Raptores*, or Birds of Prey, include the golden eagle and earne, the hawk, kite, goshawk, sparrowhawk, falcon, merlin, kestrel, buzzard, and various species of owl. The *Climbers* embrace the cuckoo, woodpecker, swift, goatsucker, hoopoe, and kingfisher. The *Songsters* are chiefly the lark, nightingale, linnet, bullfinch, wren, nut-hatch, white-throat, hedge-sparrow, wagtail, titling, bunting, titmouse, cross-bill, swallow, and various thrushes. Our *Gallinaceous Birds* are the red-grouse, peculiar to this country, the ptarmigan, blackcock, partridge, common quail, and various species of pigeon. The capercailzie, or cock of the wood, now extirpated in the British Isles, continues to abound in Norway; the peacock, turkey, common fowl, Guinea hen, and pheasant, are all of foreign origin. The *Waders* are represented by the bustard, craik, crane, plover, snipe, heron, and stork; and the *Swimmers* by the cormorant, gannet, gull, petrel, tern, auk, puffin, guillemot, teal, widgeon, duck, and goose.

(3.) Of the 73 species of European **Reptiles**, only 14 occur in the British Isles, 5 of which are common to Ireland. Of the four orders belonging to this class, the first, or *Tortoise* order, has no representative in our archipelago, save that the hawk's-bill tortoise has been occasionally seen in the Hebrides, and the leathern tortoise in Cornwall. Of the *Saurians* there occur only three species—viz., two lizards and one skink; but numerous other species belonging to the order—some of them of most gigantic dimensions—existed here in the geological eras, as the crocodile, megalosaurus, iguanodon, ichthyosaurus, and plesiosaurus. Of the 15 European *Serpents* only 3 are found in the United Kingdom—viz., the blind-worm, snake, and adder or common viper, the last-named of which is alone venomous; and of the 23 European

Batrachians, there occur only three species of eft, two toads, and two frogs. The common toad and viper are absent from Ireland.

(4.) **Fishes.**—Of the twenty-five provinces of marine life into which the late distinguished Professor Edward Forbes proposed to divide the waters of the globe, the British Seas form a part of the third, or *Celtic province.* This province is confined to the European side of the Atlantic; embraces the Baltic, North Sea, English Channel, Irish Sea, and the entire western shores of the British Isles; and is bounded on the north, west, and south by the Boreal, Virginian, and Lusitanian provinces, respectively. Its population is of a very mixed character, owing to numerous colonists from the regions lying to its north and south; but it is distinguished for being the great field of the herring fisheries, and for the thorough investigation which its fauna and flora have received at the hands of British, Danish, and Swedish naturalists. Of the 8000 fishes already known to the ichthyologist, the seas, rivers, and lakes of the United Kingdom embrace 263 species. Fishes are usually divided by the naturalists of this country into two orders—the *cartilaginous* and the *osseous*;* the former embracing only a few British species, as the sturgeon, ray or skate, shark, dogfish, lamprey, pride, hag, and sailfish; and the latter a very great number, including the salmon, trout, char, herring, pilchard, shad, pike, carp, gudgeon, cod, ling, tusk, whiting, sole, turbot, fluke, halibut, eel, perch, mackerel, minnow, &c., &c.

II. Invertebrated Animals.—Our limits forbid our enlarging on the invertebrated fauna of the British Isles; and we can only state a few of the more interesting facts, referring the student for details to works on natural history.

(1.) **Mollusca.**—This division of the Invertebrata consists of animals having bodies composed of soft parts, without any internal skeleton, some of which are protected by shells, while others are naked; having white, cold blood; breathing organs, lungs, gills or branchiæ; and of limited senses and instincts. They are usually divided into five classes—viz., *Cephalopoda*, *Pteropoda*, *Gasteropoda*, *Acephala*, and *Brachiopoda*. These are subdivided into about 200 genera, and embrace from 12,000 to 20,000 species (*see* p. 58). Of the shell-bearing molluscs, 392 species (or 232 univalves and 160 bivalves) frequent the British seas; the most plentiful genera being Trochus, Lacuna, Patina, Rissoa, Pullastra, and Acidia. Though greatly inferior, both in size and beauty, to species inhabiting tropical seas, our shell-bearing molluscs are often highly ornamental; others, again, are largely used as articles of diet, as the oyster, mussel, cockle, whelk, and limpet. The *Nudibranchiata*, or molluscs destitute of a shell, are also very numerous in the Celtic province.

(2.) **Articulata**, or jointed animals, also comprise five classes—viz., *Annulata*, *Crustacea*, *Cirrhopoda*, *Arachnides*, and *Insecta;* the first of which is represented by the earth-worm and the leech, the second by the crab and lobster, the third by the barnacle and balanus, the fourth by the spider and mite, and the fifth by the centipede, louse, flea, beetle, earwig, bug, dragon-fly, bee, butterfly, moth, fly, and gnat. The number of British insects already known exceeds 10,000 species, one-third of which extend to Ireland; but the researches of entomologists are fast increasing the number. The butterflies and moths alone are said to amount to 2000 species, one-fourth of which are found in Ireland.

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* The osseous fishes have a skeleton of *bone*, and the cartilaginous a skeleton of *cartilage*.

(3.) The **Radiata**, so called from having their limbs or members branching off from a common centre, like the spokes of a wheel, also comprise five classes—viz., *Echinodermata*, *Entozoa*, *Acalepha*, *Polypi*, and *Infusoria*, which are represented respectively by the starfish and sea-urchin, the tape-worm, the medusa, the zoophyte or coral insect, and the small microscopic animals named animalcules, which embrace the lowest forms of animal life, and exist in countless numbers in vegetable infusions.

13. **Ethnography.**—The British people belong to two distinct varieties of the Caucasian Family—the Celtic and the Gothic.

The **Celts** were the original inhabitants of the neighbouring continent, and more especially of its western side; and, at a period prior to the dawn of history, had migrated into Britain, and formed its earliest inhabitants. This migration, like most others, was not accomplished at once, but at widely distant intervals; or, what seems still more probable, the great Celtic family, before arriving at their ultimate destination, had become divided into two main sections, the *Gael* and the *Kymri*, who were mutually hostile, and spoke widely different languages. The Gael seem to have been the earliest settlers in this island, but to have been speedily dislodged by the more powerful Kymri, and driven into Scotland, Ireland, the Hebrides, and the Isle of Man,—thus forming the ancestors of the Scottish Highlanders, the Irish, and the Manx. The Kymri occupied S. Britain as far north as the Grampians, and became the ancestors of the Welsh and the Cornish. The Kymri more resembled the inhabitants of Celtic Gaul in their language than the Gael did, and some of our most eminent ethnologists maintain that the ancient Picts and Caledonians were Kymric tribes, though others equally eminent insist on their Gothic origin.

The **Gothic Race.**—But the great bulk of the population belongs to the Gothic race, partly to its Teutonic and partly to its Scandinavian branch. To the *former* belonged the Anglo-Saxons, whose original home was the country lying between the Eyder and the Weser, and who began to invade the east of England in the year A.D. 449, and continued their incursions for a century afterwards. They overcame the Celtic tribes that then occupied the land, and drove them into the mountain fastnesses of Wales and Cornwall. The next invasion of Britain took place about the beginning of the eleventh century, and those who took part in it were *Scandinavians*, chiefly Danes, under the celebrated Canute, who reigned over the Anglo-Saxons from A.D. 1017 to A.D. 1036. The last invasion of our shores was also by a Gothic tribe—viz., the Normans, who, under William the Conqueror, established their rule by the battle of Hastings, A.D. 1066, and changed the Anglo-Saxon language of the population into the modern English. Gothic tribes, therefore, form the great bulk of the present population of England, of Scotland south of the Grampians, of the north-east coast of Scotland, including the Orkney and Shetland Isles, and the north and north-east coast of Ireland. They have, moreover, largely commingled with the Celtic race in all the remainder of the British Isles, so that it is now very difficult to find an unmixed Celtic population anywhere. The following is as near an approximation to the relative proportions of the two races as can be made :—

Of Celtic blood, comparatively pure, .	6,000,000	
Do. mixed, . . .	4,000,000	
		10,000,000
Of Teutonic blood, pure, . .	10,000,000	
Do. mixed, . .	6,000,000	
		16,000,000
Completely intermingled, . .	. .	1,724,000
Total population, ...		27,724,000

Languages.—The languages presently spoken in the British Isles are five in number—Irish, Welsh, English, Lowland Scotch, and French. The two first belong to the *Celtic Stock*, and represent the most ancient language in Europe—the Celtic being the oldest member of the great Indo-European family. The Scottish Gaelic and the Manx are mere dialects of the Irish; and the Armoric of Brittany, and the now extinct Cornish of Cornwall, are nearly identical with the Welsh. But the Irish and Welsh are widely different languages, though their affinities are so numerous and close that they must be referred to the same stock. Every branch of this venerable stock is now on the wane, and disappearing before the more cultivated English and French; but they will long continue an object of interest to the philologist, who finds in them an important element for illustrating the progress and affinities of language.

The English and the Lowland Scotch belong to the *Gothic Stock* of languages—the former to the Teutonic, and the latter to the Scandinavian branch.

The three Teutonic tribes above alluded to—the Jutes, Saxons, and Angles—who invaded Britain in the fifth and sixth centuries, all spoke dialects of the same language. The union of these dialects resulted in the formation of the Anglo-Saxon,—a language which maintained its purity till about A.D. 1258, when it began to amalgamate with the Norman French, which had been introduced about two centuries previously by William the Conqueror. The result of this amalgamation was the modern English, less refined, indeed, in its structure than some other tongues, but more widespread and containing more literary and scientific treasures than any other language. It is essentially a compound language, and borrows freely from all sides, but still preserves to a great extent the lineaments of its parent. The Anglo-Saxon is the groundwork and substratum of the English; and however extensive, therefore, our knowledge may be of the Greek and Latin, we can never thoroughly understand our own language without an acquaintance with the Anglo-Saxon and other kindred Gothic tongues.

The Lowland Scotch is no dialect of the English; and is not, like the English, descended from the Anglo-Saxon, but is a parallel and sister tongue of the latter. Its true parent is the Norse—a Scandinavian and not a Teutonic language. In Caithness, Orkney, and Shetland, the geographical names are nearly all Norse; and throughout Scotland generally the language of the people is more akin to the Icelandic than to the Saxon. Instead of being regarded as a mere corruption of the English, it has all the qualities of a regular and cultivated language, and is possessed of a highly fascinating literature.

The French language is spoken in the Channel Isles,—the only portion of Normandy now belonging to the English Crown, to which they have remained attached ever since the Conquest.

Religious Belief.—Christianity is professed, under some one or other of its forms, by nearly all the population of the British Isles; but in no other country, with perhaps the exception of the United States, is the religious community divided into so many sects. No fewer than 35 denominations are to be found in England and Wales; and for the entire kingdom there are at least 40. Thus there are 5 sects of Baptists, 7 of Presbyterians, and 10 of Methodists. Perfect freedom of opinion on all subjects, and more especially complete toleration of all varieties of creed, are the main causes that originate this unparalleled multiplication of sects. Under absolute governments and in Papal countries, men are compelled to speak and act as they are dictated to by others, and therefore sects have no existence. The 40 denominations may, however, be reduced to two great divisions—viz., Protestants and Roman Catholics. The proportion of the population belonging to each of these divisions is as follows:—

Protestants, ...	21,998,000
Romanists, ...	5,291,000

The Protestants are to the Romanists as 4 to 1, the latter being found chiefly in Ireland, where they amount to 4,785,000.

The number of churches and other places of worship in Great Britain at the last general census was 37,862; affording 12,047,368 church-sittings to a population of 20,959,477. Were all these churches rightly situated with regard to the population, and did the people all belong to one religious persuasion, there would thus be a sufficient number of church-sittings for the entire community. But such is by no means the case: a large proportion of the sittings are vacant every Sabbath-day, partly owing to the eccentric position of the places of worship, and partly to their greatly diversified denominational character.

Notwithstanding her ecclesiastical divisions, Great Britain is the centre and stronghold of Bible Christianity throughout the world. It is cheering to contemplate the amount of effort that is annually put forth by the different denominations, in order to spread the Gospel at home and abroad. Leaving out of view what is done by Educational and Benevolent Societies, it appears that British Christians voluntarily contribute about one million pounds sterling annually for Christianising the world. But how trifling a sum is this when compared with our expenditure on war, pauperism, and crime! The war with Russia, which lasted only two years, cost this country about one hundred millions sterling; and it is estimated that an equal sum is spent annually in the British Isles in the purchase of spirituous liquors, and in the suppression of crime and the support of pauperism resulting from their consumption. The whole number of missionaries connected with all the societies in this country and America, including a few from the continent of Europe, has been estimated at 1421; assistant missionaries, 233; native assistants, 1958: total agents, 3612. If we take the number of heathens in the world at 630,000,000, this would give one missionary agent to every 175,000 heathens; whereas in the British Isles, where there are 30,000 ministers, there is one gospel minister for every 900 inhabitants.

14. **Form of Government.**—The Government of the United Kingdom is a limited monarchy. The legislative authority is vested in the Sovereign and Parliament, which consists of a House of Peers and a House of Commons; and the concurrence of these three estates is necessary to the enactment of new laws, or the repeal of those already existing. The crown is hereditary. The House of Peers consists of lords spiritual and temporal, and is composed of princes of the blood-royal, 2 archbishops, 24 English bishops, 4 Irish representative archbishops and bishops, 24 dukes, 21 marquesses, 111 earls, 24 viscounts, 197 barons, with 16 Scotch and 28 Irish representative peers. The House of Commons consists of 658 members, of whom 500 are for England and Wales, 105 for Ireland, and 53 for Scotland. The total number of voters in 1852 was 1,179,103, being 1 in every 24 of the population. Parliaments are septennial, but generally expire sooner, and members of the House of Commons are elected for a single parliament. Any legislative measure may originate in either House, but the House of Commons possesses the exclusive privilege of originating money-bills, and voting money out of the revenue. In this single privilege lies the palladium of the commonwealth; for though the monarch may declare war with a foreign power and levy armies, the war cannot be prosecuted, nor the army paid, but by the consent of the representatives of the nation.

15. **Army and Navy.**—The extent of the British Empire renders it necessary to keep up a large naval and military force; but owing to our insular position, our unrivalled navy, the equity of our laws, the purity of our religion, and the happiness and contentment of the people, there is no European nation of equal population that maintains so small a standing army. In 1853, before the commencement of the Russian war, the royal navy numbered 545 ships of all classes, which carried

18,080 guns, 58,000 seamen, and 18,616 marines. The army numbered 214,421 men, exclusive of militia; and the annual cost of both army and navy was £24,000,000. In 1856 the total naval force amounted to 891 vessels, including 42 line-of-battle ships, 56 heavy frigates, and 220 gun-boats; and its entire cost amounted to £19,015,000; the army, in the same year, cost £19,745,000, and the ordnance £9,632,000: total for the three branches of the service, £48,392,000. In 1814, during the French war, the expense of the army and navy amounted to £71,686,000.

16. **Commerce and Finance.**—The commercial, industrial, and financial prosperity of the United Kingdom is unrivalled among the nations. The net *Revenue* for the year ending September 30, 1856, amounted to £71,348,000, and the *Expenditure* to £93,150,000. The principal items of revenue were, Customs £23,093,000, Excise £17,861,000, Property and Income tax £15,940,000, and Stamps £7,180,000; and of expenditure, £28,112,000 as interest of Public Debt, and £48,392,000 for army, navy, and ordnance.

The **National or Public Debt** in the same year amounted to £775,312,000, being nearly £28 sterling, for every man, woman, and child in the United Kingdom. To aid us in forming some definite conception of so large a sum of money, let us suppose that 15 gold sovereigns piled above one another make one inch: Then the sum necessary to pay off the national debt would form a rod of gold 800 miles long, and having the same diameter as a sovereign. Such a rod would extend from Jersey to Unst, being the maximum length of the British archipelago; or, if laid in another direction, it would extend from London to Madrid! At the breaking out of the American war in 1775, our public debt did not exceed £128,000,000; at the termination of the French war, in 1815, it amounted to £874,000,000: during the last 40 years, therefore, it has been reduced to the extent of £100,000,000. It is still as large, however, as the combined debt of all the other European states, which is estimated at about £777,000,000. It is three times as great as that of France; six times as great as that of Russia; but is relatively smaller than that of the Netherlands, where it amounts to nearly £30 per head of the population.

The *Exports*, in 1855, were valued at £95,669,000, and the *Imports* at £143,850,000. The principal articles exported from the United Kingdom were cotton goods and yarn to the value of £34,800,000; woollen goods and yarn, £9,741,000; linen goods, £4,118,000; apparel, nearly £4,000,000; iron and steel, £9,472,000; machinery, £2,211,000; brass and copper, £2,113,000; coals, £2,439,000. The exports to foreign countries amounted to £69,000,000, and to our colonial possessions £26,000,000.—The chief imports were, 891,000,000 lbs. of cotton wool; 99,300,000 lbs. wool; silk, 7,000,000 lbs.; tea, 83,000,000 lbs.; sugar, 5,800,000 cwt.; grain, 5,729,000 qrs.; coffee, 60,000,000 lbs.; tobacco, 32,492,000 lbs.

Our **Mercantile Marine** greatly exceeds that of any other country, The number of ships that entered inwards, in 1855, was 28,265, carrying 7,017,000 tons; and of ships that cleared outwards 37,000, with a tonnage of 8,352,000. The aggregate of our coasting trade, inwards and outwards, during the same year, was 25,000,000 tons additional. There were also 11,747 boats engaged in the various fisheries along the coast, which were manned by 41,602 fishermen and boys.

Our **Inland Communication**, in proportion to the area, is also greatly superior to that of any other country. Our turnpike roads, canals, and railways form a perfect net-work of communication, which extends to the remotest parts of both the main islands. In January 1859 there were 9506 miles of railway open for traffic in the United Kingdom. The total cost of construction amounted to £325,000,000, being £34,376 per mile. The number of passengers annually conveyed by them exceeds 140,000,000; and the total receipts for passengers and freight amount to upwards of £23,000,000. So great is the safety of railway travelling, that only one traveller out of every sixteen millions is killed, and one out of every half a million injured.

Our **Turnpike Roads** now exceed 35,000 miles, and they are all kept in excellent repair; besides about 150,000 miles of cross-roads. Besides these we have 1800 miles of river-navigation that have been opened by artificial means, and 2800 miles of navigable canals. During the last ten years, moreover, about 30,000 miles of telegraph wires have been laid down, thus connecting by instantaneous communication all the cities, towns, and great maritime ports of the United Kingdom, and connecting this country with the continent of Europe. The great submarine cable between Ireland and America, now abandoned, is not included in these statistics.

Another mighty engine for furthering the interests of commerce and for promoting the intelligence of the people is the Post-Office, which has its branches and ramifications in all corners of the land. In January 1859 the number of post-offices in the United Kingdom was 11,235, employing 24,372 officials. The number of letters transmitted was 523,000,000, or 18 letters per annum for every individual of the population, besides 71,000,000 newspapers; while the number of miles daily traversed by railway trains, coaches, carts, and foot-runners, in carrying the mails to their destinations, was 132,793. Mr Rowland Hill's penny-postage scheme for inland letters came into operation in 1840; and a uniform rate of sixpence now suffices for carrying letters to the most distant of the British colonies. Books can be transmitted by post to any part of the kingdom at the rate of fourpence per lb., and to most of the colonies at sixpence per half-pound. In 1858, no fewer than 7,250,000 book-packets passed through the post-office. The gross receipts for transmission amounted to £3,087,000, and the net revenue to £1,330,000.

17. **Historical Sketch.**—The British Isles were peopled by the Gael and Kymri long before the dawn of authentic history. It was not till a late period that the Greeks and Romans obtained any knowledge of them; but in early times the Phœnicians visited the Scilly Islands and the coasts of Cornwall for tin. Aristotle, the disciple of Plato and tutor of Alexander the Great (B.C. 342), is the first to record the existence of "two large islands in the ocean, named Albion and Erin." The Romans knew nothing of them personally till the Gallic war of Julius Cæsar, who twice invaded Britain (B.C. 55, 54). Cæsar's stay was of limited duration, and accompanied by no important result; and the Romans made no further attempt to conquer the island for 100 years. In the reign of Claudius they again landed, and permanently subdued the country south of the Thames. In the year 61 A.D., the Britons, under Boadicea, sustained another decisive defeat; and the conquest of south Britain was finally completed by Agricola (A.D. 78-84). In order to protect his newly-acquired territory from the incursions of the northern Celts, he erected a series of forts between the Firths of Clyde and Forth, calling the country lying to the south of it *Britannia Romana*, and that to the north Caledonia, or *Britannia Barbara*. The Romans, however, gave up the northern conquests of Agricola in the reign of Hadrian (A.D. 120), and caused a wall to be built from the Solway to the mouth of the Tyne as the extreme limit of the Roman province. Early in the fourth century the Caledonians, who now appear under the names of Picts and Scots, broke through the wall, and Gothic tribes began to infest the coasts; but the declining power of the Empire was unable to afford the province any effectual assistance, and in the reign of Honorius all the Roman troops were withdrawn from the island (A.D. 420).

About 30 years after the departure of the Romans, the Jutes, Saxons, and Angles, successively invaded south Britain, and drove the Kymri into Wales (A.D. 449). These Gothic nations divided England into seven parts, each of which had its own chief; and their government is called the Saxon Heptarchy, which maintained its ground till the Danes under Canute invaded the country at the beginning of the eleventh century. The Normans, from France, subdued the country shortly afterwards. The battle of Hastings was fought in the year 1066, and the Anglo-Saxons were reduced to a state of slavery.

Of the subsequent history of the British Isles we can only enumerate a few of the most important facts. Ireland was subdued by Henry II. of England, A.D. 1172. Richard I., king of England, engaged in the First Crusade in 1189. The *Magna*

Charta was signed by King John in 1215. Wales was subdued and added to England by Edward I. in 1283. There has been a regular succession of English parliaments since 1293. Wickliffe's translation of the Bible was executed in 1380; and the art of printing introduced, according to some, in 1460. In 1468 the Orkney and Shetland Islands were bestowed by the King of Denmark on James III. of Scotland. In 1525 Tyndale's translation of the New Testament was published at Wittemberg, and nine years afterwards in England. The Reformation began in England in 1534; in 1584 Virginia was discovered by Sir Walter Raleigh; and in 1588 the Spanish Armada was destroyed by the English. In 1603 the crowns of England and Scotland were united in the person of James VI.; and Barbadoes, Britain's first colony, was colonised in 1625. A civil war in Britain terminated in the execution of Charles I. in 1649, and Oliver Cromwell became dictator for eleven years. In 1662 the Royal Society was instituted; in 1665 the plague broke out in London; and Newton's Philosophy was published in 1686. The celebrated Revolution took place in 1688, and William III. was called to the throne. The legislative Union of England and Scotland took place in 1707; and the first and second rebellions in Scotland in 1715 and 1745 respectively. The American War of Independence began in 1776 and terminated in 1784. The war with Revolutionary France commenced in 1793, and terminated by the battle of Waterloo in 1815. The legislative Union of Great Britain and Ireland took place in 1800, and was followed next year by the first regular census of the British Isles. Coal-gas was first used for lighting apartments in 1792; the Surrey iron railway, the first in Britain, was constructed in 1801; and in 1812 Henry Bell's diminutive steamer, "The Comet," the commencement of European steam-navigation, was launched on the waters of the Clyde. The Catholic Emancipation Act was passed by the British legislature in 1829, and the Reform Bill in 1832. In 1842 the Tariff Reform was begun, which has resulted in Free Trade; and the Industrial Exhibition of all nations took place in London in 1851. In 1854 Great Britain, in alliance with France, declared war against Russia, in consequence of its encroachments on Turkey; in 1855 Sebastopol was taken by the allied armies of Britain, France, Turkey, and Sardinia; and peace established in 1856.

ENGLAND AND WALES.

1. **Position and Boundaries.**—England, including Wales, forms the south part of Great Britain, and is situated between lat. 49° 58′ and 55° 45′ north; and between lon. 1° 45′ east, and 5° 44′ west; thus occupying 5° 47′ of lat., and 7° 29′ of lon. It is bounded on the north by Scotland, from which it is separated by the Tweed on the one side, and by the Sark, Esk, Liddel, and Kershope on the other; on the east by the North Sea; on the south by the English Channel, which separates it from France; and on the west by the Atlantic Ocean, St George's Channel, and the Irish Sea.

2. **Form and Extreme Points.**—In form it approaches to a scalene triangle: the base, from Land's End to South Foreland, is 317 miles; the east side, from South Foreland to Berwick, 345 miles; and the west side, from Berwick to Land's End, 425 miles. Lizard Point forms the extreme south of the mainland; Lowestoft Ness, in Suffolk, the extreme east; Berwick the extreme north; and Land's End in Cornwall the extreme west.

3. **Line of Coast.**—The perimeter of the triangle above mentioned is 1087 miles; but when the principal indentations of the coast are included the sea-margin is at least 2000 miles, affording 1 mile of coast to every 29 square miles of surface. Europe, the most highly indented of the continents, affords 1 mile of coast to every 156 square miles. The principal indentations are on the west side, especially the Bristol Channel, the Irish Sea, and the Solway; those on the east side are the Humber, Wash, and the estuary of the Thames.

4. **Area and Dimensions.**—The area is 57,812 square miles; being 50,387 for England, and 7424 for Wales; and amounts to a little more than $\frac{2}{3}$ of the area of the entire island, which is, in turn, $\frac{1}{42}$ of the area of Europe. Extreme length, from Berwick to St Alban's Head, or along the 2d meridian, 363 miles; breadth from Kent to Cornwall 317 miles.

5. **Population.**—In 1851 the population was 17,927,609; in 1801 it was only 8,872,980. It has thus more than doubled itself in the half-century. The population per square mile is 311, or 335 for England without Wales, which is thinly peopled. The estimated population at 1st January 1859 was 19,304,000 for England and Wales. England is therefore one of the most densely peopled countries in the world. The most populous counties are Middlesex, Surrey, Lancashire, and Yorkshire. There are 6683 persons to every square mile in Middlesex, and 1064 in Lancashire; while there are only 77 in Westmoreland, and 58 in Radnor.

6. **Political Divisions.**—England is divided into 40 counties, and Wales into 12. The English counties are most conveniently arranged into 7 eastern, 10 southern, 7 western, and 16 midland.

In the following table of counties and towns, which includes all towns above 750 inhabitants, the population (of 1851) is given in every case where it amounts to 4000, as also the river on which the city or town stands. When the population is between 750 and 4000, it was deemed unnecessary to specify it, or even to name the river; but all such towns are enumerated in a separate list, after the others, and may with propriety be omitted in a first course.*

SEVEN EASTERN COUNTIES.

1. **Northumberland**, in the north-east.—NEWCASTLE 88,† Tynemouth 15, North Shields 9, Hexham 5 (Tyne), Morpeth 10 p. b. (Wansbeck), Alnwick 6 (Aln), Berwick 15 (Tweed).

Towns between 750 and 4000 Inhabitants:—Haltwhistle, Bellingham, Allandale, Blyth, Rothbury, Belford, Wooler, Otterburn.

2. **Durham**, south of Northumberland.—DURHAM 13, Sunderland with Wearmouth 67, Bishop-Auckland 5, Wolsingham 5 p. (Wear), South Shields 29, Gateshead 26 (Tyne), Stockton 10, Barnard Castle 4 (Teas), Darlington 11 (Skerne), Hartlepool 6 (east coast).

St John's Weardale, Spittal, Chester-le-Street.

3. **Yorkshire**, south of Durham.—YORK 40, Goole 5, Selby 5 (Ouse), Ripon 6, Hawes 11 (Ure), Kingston-upon-Hull 85, Beverley 10 (Hull), Doncaster 12, Sheffield 135, Pennistone 6 (Don), Barnsley 15 (Dearne), Rotherham 6 (Rother), Pontefract 12 n., Leeds 172, Bradford 104 n., Bingley 14, Keighley 13, Skipton 5 (Aire), Wakefield 22, Dewsbury 5, Halifax 34 (Calder), Huddersfield 31 (Colne), New Malton 8 (Derwent), Otley 5 (Wharfe), Knaresborough 6

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* The student's attention is particularly requested to the *order* in which the towns and rivers are given. It is as nearly as possible the same as that in the extended table, entitled "Tabular View of Rivers and Towns" (p. 151). The capital of the county, however, stands *first*, and is followed by all the large towns standing on the same river as the capital, beginning at the mouth and proceeding upwards, or beginning as near the mouth as the boundary of the county will allow. Should the capital stand on a *tributary river*, all the other towns in the county on that tributary are placed immediately after it; and then those on the main river, beginning at its mouth; and, lastly, those on the other tributaries, in the order in which they stand in the River System at page 151. Thus all the towns in any county belonging to one river-basin are enumerated before those belonging to any other river-basin are entered on. The name of the river is put within parenthesis.—The order of the small towns is precisely the same as that of the large.

† The numerals following a city or town denote so many *thousands*: thus Newcastle, 88, signifies that the population of Newcastle amounts to 88,000; p. denotes that the population given is that of the town and *parish* together; n. means *near* the river the name of which follows; while p. b. denotes *parliamentary borough*.

(Nidd), Richmond 5 (Swale), Thirsk 5 (Codbeck), Northallerton 5 (Wiske), Scarborough 13 (east coast), Whitby 11 (Esk), Sedbergh 5, p. (Dent).

Patrington, Hedon, North Cave, South Cave, Great Driffield, Kilham, Howden, Cawood, Aldborough, Boroughbridge, Masham, Middleham, Leyburn, Askrigg, Thorne, Snaith, Castleford, Pocklington, Market-Weighton, Pickering, Helmsley, Kirkby, Tadcaster, Wetherby, Easingwold, Harrogate, Ripley, Pateley Bridge, Bedale, Reeth, Muker, Tickhill, Hornsea, Bridlington, Dent, Egton, Guisborough, Bawtry, Settle, Yarm, Stokesley.

4. **Lincolnshire**, south of Yorkshire.—LINCOLN 18, Boston 18, Grantham 11 (Witham), Horncastle 5 (Bain), Holbeach 5 n., Spalding 8, Stamford 9 (Welland), Louth 11 (Ludd), Great Grimsby 12 (Humber), Gainsborough 7 (Trent).

Bolingbroke, Tattershall, Sleaford, Wragby, Market-Rasen, Sutton St Mary's, Crowland, Market-Deeping, Bourne, Corby, Wainfleet, Burgh, Spilsby, Alford, Barton, Epworth, Glanford Briggs, Caistor, Kirton-in-Lindsey, Crowle.

5. **Norfolk**, south-east of Lincolnshire.—NORWICH 68, Yarmouth 31 (Yare), Wells 5 (north coast), Lynn-Regis 19 (Great Ouse), Thetford 4 (Little Ouse).

Wymondham, Hingham, Aylesham, North Walsham, Harleston, Diss, Attleborough, Fakenham, Cromer, Holt, Downham-Market, Swaffham, Watton, Kenninghall, East Harling, East Dereham.

6. **Suffolk**, south of Norfolk.—IPSWICH 33 (Orwell), Sudbury 6 (Stour), Woodbridge 5 (Deben), Lowestoft 7 (east coast), Beccles 4, Eye 8 n. (Waveney), Bury St Edmund's 14 (Larke).

Needham-Market, Stow-Market, Long Melford, Clare, Haverhill, Hadleigh, Lavenham, Debenham, Aldborough, Framlingham, Halesworth, Bungay, Brandon, Mildenhall, Dunwich.

7. **Essex**, south-west of Suffolk.—CHELMSFORD 6 (Chelmer), Maldon 6, Saffron-Walden 6 p. (Blackwater), Colchester 19, Halstead 6 (Colne), Harwich 5 (Stour).

Dunmow, Thaxted, Brentwood, Coggeshall, Braintree, Rayleigh, *Tilbury Fort*, Romford, Barking, Ilford, Epping, Waltham Abbey, Rochford, Billericay, Manningtree.

TEN SOUTHERN COUNTIES.

8. **Kent**, in the south-east and next to France.—MAIDSTONE 21, Sheerness 9 (in the Isle of Sheppey), Chatham 29, Rochester 15, Tunbridge 5, Tunbridge Wells, 11 n. (Medway), Hythe 13, Folkstone 7 (south coast), Dover 22 (Strait of Dover), Deal 7 (east coast), Ramsgate 12, Canterbury 18 (Stour), Margate 9, Faversham 5 (north coast), Gravesend 16, Woolwich 32 p., Greenwich 35, Deptford 28 (Thames), Dartford 6 (Darent), Lewisham 15 p. (Ravensbourn).

Stroud, Sandwich, Wye, Ashford, Herne Bay, Whitstable, Seven Oaks Westerham, Sydenham, Bromley, Tenterden, Cranbrook, Romney.

9. **Sussex**, west of Kent.—CHICHESTER 9 (Lavant), Worthing 5, Brighton 70, Hastings 17 (south coast), Midhurst 7 (West Rother), New Shoreham 31 p. b., Horsham 6 p. (Adur), Lewes 10 (Ouse), Rye 9 (Rother).

Bognor, Little Hampton, Arundel, Petworth, Steyning, Newhaven, Cuckfield, Hailsham, Battle, East Grinstead.

10. **Surrey**, north of Sussex.—GUILDFORD 7 (Wey), part of Deptford 28, Southwark and Lambeth (parts of London), Richmond 9, Kingston 6 (Thames), Wandsworth 10 p., Croydon 10 (Wandle), Reigate 5 (Mole).

Godalming, Farnham, Kew, Chertsey, Epsom, Leatherhead, Dorking, Chobham, Egham, Haslemere, Dulwich.

11. **Berks**, north-west of Surrey.—READING 22, Newbury 7 (Kennet), Windsor 10, Wallingford 8 p. b., Abingdon 6 (Thames).

Hungerford, Lambourne, Maidenhead, Hurst, Wokingham, Wantage, Farringdon, Ilsley, Sandhurst.

12. **Hampshire** or **Hants**, south of Berks.—WINCHESTER 14, Southampton 35 (Itchin), Christchurch 8 (Hampshire Avon), Lymington 5 (the Solent), Andover 5 n. (Test), Tichfield 4 (Aire), Portsmouth 72, Gosport 7 (Portsmouth Harbour), Petersfield 6 (Rother). In the Isle of Wight are Cowes 5, Newport 8 (Medina), Ryde 7 (north coast).

Alresford, Odiham, Ringwood, Fordingbridge, Romsey, Stockbridge, Whitchurch, Bishop's Waltham, Fareham, Havant, Alton, Basingstoke, Kingsclere. In Isle of Wight, Osborne, Ventnor.

13. **Wilts**, north-west of Hants.—SALISBURY 12, Devizes 7 (Avon), Wilton 9, Warminster 4 (Wily), Great Bradford 4, Trowbridge 10, Chippenham 6, Malmesbury 7 (Lower Avon), Westbury 7 p. (Were), Calne 5 (Marden), Cricklade and Swindon 36 p. b. (Thames), Marlborough 5 (Kennet).

Heytesbury, Mere, Melksham, Highworth, Wooton-Basset, Amesbury, Avesbury or Abury.

14. **Dorset**, south of Wilts.—DORCHESTER 6, Poole 9, Wareham 7 p. b., including Corfe Castle and Bere-Regis (Frome), Bridport 8 (Brit), Weymouth and Melcombe-Regis 10 (Wey), Shaftesbury 9 p. b., n., Blanford 4 (Stour), Sherborne 4 (Ivel).

Piddleton, Cerne-Abbas, Lyme-Regis, Beaminster, Wimborne, Sturminster-Newton, Cranborne, Stalbridge.

15. **Somerset**, north-west of Dorset.—BATH 54 (Lower Avon), Frome 10 (Frome), Wells 5 (Axe), Bridgewater 10 (Parret), Taunton 14, Wellington 4 (Tone), Yeovil 6 (Yeo), Weston-super-Mare 4 (Bristol Channel).

Glastonbury, Shepton-Mallet, North and South Petherton, Crewkerne, Somerton, Milverton, Wiveliscombe, Ilchester, Milborne Port, Ilminster, Chard, Watchet, Minehead, Wincanton, Bedminster (a suburb of Bristol), Bruton.

16. **Devon**, west of Somerset.—EXETER 41, Exmouth 5, Tiverton 11 p. (Ex), Plymouth 52, Devonport 50 (Plymouth Sound),

Tavistock 8 (Tavy), Dartmouth 5 (Dart), Teignmouth 5 p. (Teign), Torquay 8, Brixham 6 (Tor Bay), Barnstaple 9 (Taw).

Topsham, Bampton, Crediton, Cullompton, Bradninch, Totness, Ashburton, Newton-Bushel, Chudleigh, St Mary Ottery, Honiton, Sidmouth, Colyton, Axminster, Ilfracombe, Hartland, South Molton, Bideford, Great Torrington, Hatherleigh, Kingsbridge, Modbury.

17. **Cornwall**, in the south-west extremity.—BODMIN 6 (Camel), Camborne 7 (north coast), St Ives 10 (Heyl), Helstone 7 (Looe), Penzance 9, St Just 9 p. (Mount's Bay), Falmouth 5, Penryn 4, Truro 11, Redruth 7 n. (Falmouth Harbour), Liskeard 6 (Looe), Launceston 6 (Tamar).

Stratton, St Columba, Marazion or Market-Jew, St Mawes, St Austell, Fowey, Looe, St Germans, Saltash, Callington (in Scilly Isles), Hughton (in St Mary).

Seven Western Counties.

18. **Monmouth**, north of Somerset.—MONMOUTH 6, Chepstow 4 p. (Wye), Newport 19, Abergavenny 5 (Usk), Tredegar 8 (Ebwy).

Caerleon, Usk, Pontypool.

19. **Hereford**, north of Monmouth.—HEREFORD 12 (Wye), Leominster 5 p. (Lug).

Ross, Bromyard, Pembridge, Kington, Ledbury, Weobley.

20. **Salop** or **Shropshire**, north of Hereford.—SHREWSBURY 20, Bridgenorth 8, Broseley 5 p., Much-Wenlock 21 p. b., n. (Severn), Ludlow 5 (Teme), Wellington 5 n., Market-Drayton 5 p. (Tern), Oswestry 5 (Perry).

Cleobury Mortimer, Clun, Shiffnal, Wem, Whitchurch, Ellesmere, Newport, Bishop's Castle, Church Stretton.

21. **Cheshire**, north of Salop.—CHESTER 28, Malpas 8 p. n. (Dee), Birkenhead 24, Runcorn 8, Stockport 54, Staley Bridge 21 (Mersey), Nantwich 5 (Weaver), Congleton 11 (Dane), Altringham 5, Macclesfield 39 (Bollin).

Neston, Parkgate, *Northwich*, Middlewich, Knutsford, Tarporley, Crewe.

22. **Lancashire**, north of Cheshire.—LANCASTER 16 (Lune), Ulverton 6 (Morecambe Bay), Fleetwood 4, Poulton 8 p., Garstang 7 p. (Wyre), Preston 70, Clitheroe 7 (Ribble), Blackburn 47 n. (Darwen), Burnley 21, Colne 6 (West Calder), Wigan 32, Leigh 5 (Douglas), Chorley 9 (Chor), Ormskirk 6, Prescot 7 (Alt), LIVERPOOL 376, Warrington 23, Ashton-under-Lyne 30 (Mersey), St Helen's 15 (Sankey), MANCHESTER 316, Salford 85, Bury 31, Haslingden 9 (Irwell), Oldham 72 (Medlock), Middleton 6 (Irk), Bolton 61 (Crole), Rochdale 29 (Roche).

Broughton, Dalton, Cartmell, Hawkshead, Burton-in-Kendal, Kirkham, Newton.

23. **Westmoreland**, north of Lancashire.—APPLEBY 3 (Eden), Kendal 12 (Ken).

Brough, Kirkby-Stephen, Ambleside, Milnethorp, Kirkby-Lonsdale, Orton.

24. **Cumberland**, north-west of Westmoreland.—CARLISLE 26 (Eden) Penrith 7 (Eamont), Wigton 4 (Wampool), Whitehaven 19 (west coast), Maryport 6 (Ellen), Workington 6, Cockermouth 7 (Derwent).

Brampton, Longton, Allonby, *Keswick*, Egremont, Ravenglass, Aldstone.

SIXTEEN MIDLAND COUNTIES.

25. **Derby**, south of Yorkshire.—DERBY 41, Belper 10 (Derwent), Alfreton 8 p. (Erewash), Chesterfield 7 (Rother).

Matlock, Chatsworth, Winster, Bakewell, Tideswell, *Buxton*, Chapel-en-le-Frith, Ashbourne, *Wirksworth*, Dronfield, Cromford, Castleton, Hartington.

26. **Notts** or **Nottingham**, east of Derby.—NOTTINGHAM 57, Newark 11 (Trent), East Retford 46 p. b., Mansfield 10 (Idle), Worksop 6 (Ryton).

Southwell, Bingham, Ollerton, Kirkby-in-Ashfield.

27. **Stafford**, between Derby and Salop.—STAFFORD 12 (Sow), Burton-on-Trent 6, Newcastle-under-Lyne 11, Stoke-upon-Trent 84, including Longton 15, Hanley 25, and Burslem 16 (Trent), Leek 9 (Churnet), Lichfield 7 n., Tamworth 9, Wednesbury 12 n., Walsall 26 (Tame), Wolverhampton 50, Bilston 24 n. (Smestow).

Eccleshall, Alrewas, Rugeley, Stone, Tutbury, Uttoxeter, Cheadle, Abbots-Bromley, Penkridge, Cannock, Brewood.

28. **Leicester**, east of Stafford.—LEICESTER 61, Loughborough 11, Hinckley 6 (Soar), Melton-Mowbray 4 (Wreak), Ashby-de-la-Zouch 4 (Mease).

Kegworth, Mount Sorrel, Castle Donnington, Market-Harborough, Lutterworth, Market-Bosworth.

29. **Rutland**, east of Leicester.—OAKHAM 3 (Wreak), Uppingham 2 (Welland).

30. **Worcester**, south of Stafford.—WORCESTER 28, Great Malvern 4 p., n., Bewdley 7 (Severn), Evesham 5 (Upper Avon), Droitwich 7, Bromsgrove 4 (Salwarp), Kidderminster 19, Stourbridge 8, Dudley 38 n. (Stour).

Upton, Stourport, Pershore, Shipston, Tenbury, Little Malvern.

31. **Warwick**, east of Worcester.—WARWICK 11, Stratford 3, Rugby 6 (Upper Avon), Leamington 16 (Leam), Coventry 4 n. (Sow), Nuneaton 5 (Anker), BIRMINGHAM 233 (Rea).

Alcester, Henley-in-Arden, Southam, Kineton, Atherstone, Coleshill, Solihull, Sutton-Coldfield, Kenilworth.

32. **Northampton**, east of Warwick.—NORTHAMPTON 27, Peterborough 9, Wellingborough 5, Daventry 4 (Nene), Kettering 5 (Ise).

Cliffe-Regis, Oundle, Rothwell, Brackley, Towcester, *Naseby*, *Fotheringay*.

33. **Huntingdon**, east of Northampton.—HUNTINGDON 6, St Ives 4, St Neots 3 (Great Ouse).

Kimbolton, Ramsey, Yaxley.

34. **Cambridge**, east of Huntingdon. — CAMBRIDGE 28, Newmarket 3 n., partly in Suffolk (Cam), Ely 6 (Great Ouse), Wisbeach 11, March 4, Whittlesea 6 (Nene).

Linton, Royston.

35. **Gloucester**, east of Monmouth.—GLOUCESTER 18, Thornbury 5, Tewksbury 6 (Severn), Bristol 137 (Lower Avon), Stroud 37, Minchin-Hampton 5 p. (Stroud), Cheltenham 35 (Chelt), Cirencester 6 (Churn).

Lydney, Newnham, Coleford, *Berkeley*, Wotton-under-Edge, Newseat, Lechlade, Moreton, Stow, Fairford, North Leach, Bisley.

36. **Oxford**, east of Gloucester.—OXFORD 28, Henley 3 (Thames), Banbury 9 (Cherwell), Woodstock 8 (Glyme).

Bampton, Thame, Deddington, Bicester, Witney, Burford.

37. **Bucks** or **Buckingham**, east of Oxford. — BUCKINGHAM 8 (Great Ouse), Eton 4 p., High Wycombe 7, Great Marlow 7 (Thames), Aylesbury 27, p. b. (Thames).

Olney, Newport-Pagnel, Stony Stratford, Winslow, Colnbrook, Beaconsfield, Amersham, Ivinghoe, Wendover, Princes-Risborough.

38. **Bedford**, north-east of Bucks.—BEDFORD 12 (Great Ouse), Biggleswade 4 (Ivel), Leighton-Buzzard 5, Dunstable 4 (Ouzel), Luton 11 (Lea).

Potton, Shefford, Ampthill, *Woburn*.

39. **Herts** or **Hertford**, south of Bedford.—HERTFORD 7, Ware 5 (Lea), Bishop-Stortford 5 (Stort), Rickmansworth 5 p., St Alban's 7 (Colne), Hitchin 5 (Hiz).

Hoddesdon, Hatfield, Chipping-Barnet, Watford, Hemel-Hempstead, Berkhampstead, Tring, Baldock, *Coleshill*.

40. **Middlesex**, south of Herts.— LONDON, 2027, including only the City, Westminster, Marylebone, Finsbury, Tower Hamlets, Southwark and Lambeth; but the population is 2362 including Blackwall 28, Chelsea 56, Kensington 44, Hammersmith 17, Hampstead 12, and Highgate 5, all in Middlesex, together with Greenwich and Woolwich in Kent, as also parts of Essex (Thames), Fulham 9, BRENTFORD, the county town, 9 (Thames).

Twickenham, Hampton, Staines, Tottenham, Enfield, Uxbridge.

WALES.

WALES contains 12 counties, six of which are in North Wales and six in South Wales.

NORTH WALES—SIX COUNTIES.

1. **Flint**, west of Cheshire.—MOLD 3* (Allen), Holywell 6, Flint 3, Hawarden 6, p. (Dee), St Asaph 2 (Clwyd).

Rhyddlan, Caerwys.

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* In Wales, Scotland, and Ireland, all towns amounting to 2500 inhabitants and upwards are here placed among the large, the limit of the small remaining as before. At this population there are 36 large towns in Wales; but only half that number will be found at 4000 and upwards.

2. **Denbigh**, west of Flint.—DENBIGH 6, Ruthin 3 (Clwyd), Wrexham 7, Llangollen 5 (Dee), Abergeley 3 (north coast).

3. **Caernarvon**, west of Denbigh.—CAERNARVON 9, Bangor 6 (Menai Strait), Llanrwst 4 p. (Conway).

Conway, Nevin, Pwllheli, Tremadoc.

4. **Anglesea**, north-west of Caernarvon. — BEAUMARIS 3 (Menai Strait), Amlwch 3 (north coast), Holyhead 6 (in Holy Island).

Newburgh, Llangefni.

5. **Merioneth**, south-east of Caernarvon. — DOLGELLY 2 (Maw), Bala 2 (Dee).

Barmouth, Harlech, Towyn, Corwen.

6. **Montgomery**, south-east of Merioneth. — MONTGOMERY 1, Welshpool 7, Newton 6, Llanidloes 3 (Severn).

Llanfair, Llanfyllin, Machynlleth.

SOUTH WALES—SIX COUNTIES.

7. **Cardigan**, south of Merioneth.—CARDIGAN 4 (Teify), Aberystwith 5 (Ystwith).

Lampeter, Tregaron.

8. **Pembroke**, in the south-west.—PEMBROKE 10, Haverfordwest 7 (Milford Haven), Tenby 3 (south-east coast), St David's, 3 p. (west coast).

Milford, Narberth, Newport, Fishguard.

9. **Caermarthen**, east of Pembroke.—CAERMARTHEN 11, Llandeilo-Vawr 6 p. (Towey), Llanelly 9 (south coast).

Llangadoc, Llandovery, Kidwelly, Newcastle-Emlyn.

10. **Glamorgan**, south-east of Caermarthen.— CARDIFF 18 (Severn), Swansea 32 (Tawy), Neath 6 (Neath), Merthyr-Tydvil 63 (Taff).

Aberavon, Bridgend, Cowbridge, Llandaff, Llantrissent, Caerfilly.

11. **Brecknock**, north of Glamorgan.—BRECON 6 (Usk).

Crickhowel, Hay, Talgarth, Builth.

12. **Radnor**, north of Brecknock.—NEW RADNOR 23 (Somergill).

Presteign, Rhayader, Knighton.

7. Descriptive Notes — COUNTIES AND TOWNS.

1. **Northumberland**, the most northern county of England, lies between the Tweed on the N. and the Tyne and Derwent on the S. —G. C. :* Mountain Limestone in the whole N. and W., millstone grit and the coal-measures in the S.E., extending southward

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* G. C. denotes Geological Character. For a general view of the geological character of England and Wales, see under "British Isles," par. 8, p. 105.

to the Tees in Durham. This is the most celebrated coal-field in the world, and is the source of immense wealth to the mining and manufacturing population of the N.E. of the kingdom. The Tyne flows through the centre of this precious mineral deposit, and the towns in its basin are all prospering. The Cheviot breed of sheep is celebrated.

TOWNS. *Newcastle,* on the Tyne, 10 miles from its mouth, is the centre of the coal trade in the north of England, and the fifth commercial city in the kingdom; being only excelled by London, Liverpool, Bristol, and Hull. There are 50 coal-pits within a distance of 8 miles of it, yielding upwards of 3,000,000 tons annually, and large manufactories of steam-machinery and glass. It is the birthplace of the poet Akenside, and of Lord Chancellor Eldon. *Tynemouth* and *Shields* are the seaports of Newcastle. *Morpeth,* on the Wansbeck, is noted for its great cattle-market. *Berwick,* on the north side of the Tweed, famous in the annals of border warfare, was long independent of both kingdoms, and still enjoys the privileges of a county. *Otterburn,* a village of Northumberland, near which, in 1388, was fought the battle of Chevy Chase, between Percy, Earl of Northumberland, and Earl Douglas.

2. **Durham,** between the Tyne and the Tees.—G. C.: Millstone Grit, coal-measures, permian, and New Red or trias. Famous for its rich coal-deposits, and the Teeswater breed of short-horned cattle. Lead, iron, and grinding-stones are largely exported. Surface mountainous in the west, and covered with heath. A large portion of the land belongs to the bishopric of Durham.

TOWNS. *Durham,* on the Wear, the seat of one of the five English Universities, contains a celebrated cathedral, a castle built by William the Conqueror, and has valuable collieries in the vicinity. *Sunderland,* one of the principal ports of England for the shipment of coal. Shipbuilding is extensively carried on; has an immense cast-iron bridge over the Wear, whose single arch is 237 feet in span. *Bishop-Auckland,* the residence of the Bishop of Durham, whose See was the wealthiest in the kingdom till lately, when the revenue was reduced from £22,000 a-year to £8000. *Gateshead,* a suburb of Newcastle, on the opposite side of the Tyne; a great fire in 1854 destroyed much life and property. *Stockton* and *Darlington* are united by one of the earliest constructed railways in the kingdom. *Hartlepool*—steam navigation to Hamburg, Rotterdam, Antwerp, and Scotland.

3. **Yorkshire,** the largest, and one of the most populous counties of England (area 5836 square miles, population 1,797,000), lies between the Tees and the Humber; consists of three divisions called *Ridings* (a word which signifies *thirds* in the Anglo-Saxon language)—viz. the North, East, and West Ridings, which all meet at the city York. It embraces all the geological formations in regular succession from the mountain limestone in the W. to the chalk and tertiaries in the E. The West Riding is the chief seat of mining and manufacturing industry, the Coal-measures being more accessible there. The fine broad-cloths and other woollen fabrics of the West Riding are unrivalled throughout the world. Cotton, flax, and silk mills are also very numerous and important. The North Riding is principally oolitic, and is chiefly famous as a

grazing country. The East Riding is, for the most part, cretaceous and tertiary, and comprises the hilly district called "the Wolds."

TOWNS. *York*, on the Ouse, near the centre of the county, where the three Ridings converge, is, in point of ecclesiastical rank, the second city in the kingdom,—the Archbishop of York being the highest ecclesiastical dignitary next to the Archbishop of Canterbury; and the cathedral, called York Minster, is the finest structure of the kind in England. *Goole*, at the confluence of the Ouse and Don, and at the termination of the Aire and Calder navigation. *Selby*, the birthplace of Henry I. *Ripon*, where a conference took place between the English and Scottish Commissioners, with a view to adjust the differences between Charles I. and his Scottish subjects, in 1640. *Hawes*, on the Ure; near it is a magnificent cascade called Hardraw Scar, with a perpendicular fall of 102 feet. *Hull*, or Kingston-upon-Hull, is the fourth commercial city in England; in 1845 it had 2166 ships, carrying about 400,000 tons—its annual exports exceed £10,000,000 sterling, being the great outlet for the manufactures of the West Riding. *Beverley*, also on the Hull, the capital of the East Riding. *Doncaster*, on the Don, famous for its annual races. *Sheffield*, noted for cutlery and plated goods, in which it is second only to Birmingham. *Pennistone*, has woollen and cotton manufactures. *Barnsley*, on the Dearne, the chief seat of the linen trade. *Rotherham*, at the confluence of the Don and Rother, has manufactures of all kinds of iron goods, including cannons, machinery, &c. *Pontefract* (Pomfret), with a famous castle now in ruins, where Richard II. died. *Leeds*, *Bradford*, *Bingley*, *Halifax*, and *Huddersfield*, with the other towns in the basin of the Aire, are the principal seat of the woollen trade, for which the West Riding is so celebrated. Leeds alone has 106 woollen mills. *Bradford* has colleges for Baptists, Independents, and Wesleyans, and is the principal seat of the worsted-yarn manufacture. *Knaresborough;* in the vicinity is the far-famed "dropping well," of strongly petrifying quality. *Scarborough* and *Harrogate*, famous for their mineral waters, which are highly medicinal. *Whitby*, an important seaport town, on the Esk, the birthplace of Captain Cook, the navigator.

4. **Lincolnshire**, between the Humber and the Wash, contains the geological formations in regular succession, from the lias in the W. to the tertiary in the E. and S.; it consists of three widely different districts—viz., the *moors* in the W., the *wolds* in the N.E., and the *fens* in the S. and E. The *fens* are a part of the celebrated Bedford Level—an immense swamp partially drained two centuries ago by the Earl of Bedford, and the remainder recently by the British Government—form the best pasture-land in England, and belong to the tertiary formation. The *wolds* are a line of chalk downs in the great cretaceous system of England, which extends from Flamborough Head in Yorkshire to the coast of Dorsetshire. The *moors* are now mostly cultivated.

TOWNS. *Lincoln*, the capital, on the Witham, is noted for its beautiful cathedral, which contains a gigantic bell called Tom of Lincoln. At the time of the Conquest the Witham was navigable for large vessels up to the town, and Lincoln formed then one of the principal seaports in the kingdom. *Boston* has a fine church, with a tower that serves as a lighthouse for the navigation of the Wash. *Grantham;* in the vicinity

Sir Isaac Newton was born—has a considerable trade in malting and in exporting corn. *Horncastle,* from Saxon *hyrn,* a corner, because it occupies the angle formed by the Bain and Waring. *Spalding* was a place of some consequence even in Saxon times. *Stamford* and *Louth* send large quantities of corn to London. *Great Grimsby* has a fine harbour and extensive docks. *Gainsborough,* on the Trent, with considerable foreign and inland trade.

5. **Norfolk,** between the Wash and the Waveney.—G.C.: Principally cretaceous, but tertiary in the E.; coast-line low, surface level; soil, a light sandy loam, well fitted for barley and turnips, which constitute the principal crops. The only important mineral is marl; extensive manufactures of woollen and silk fabrics; great numbers of turkeys and geese are reared for the London market.

TOWNS. *Norwich,* on the Yare, the finest city in the E. of England, was the birthplace of Dr Samuel Clarke and of Archbishop Parker, was long famous for its worsted manufactures, first introduced by the Flemings in the sixteenth century, and has a huge cathedral, with a spire 315 feet high. *Yarmouth,* also on the Yare, noted for its herring-fishery, the most important in England, and for its roadstead, lying between the coast and a dangerous sandbank in the vicinity. *Wells* has a church built of flint, with a lofty tower. *Lynn-Regis* or King's-Lynn, on the Great Ouse, here 1000 feet broad. *Thetford,* at the confluence of the Thet and Little Ouse, also with a church built of flint, called the Black Church.

6. **Suffolk,** between the Waveney and the Stour.—G.C.: Chalk in the W., tertiary in the E.; surface level, and soil well cultivated, producing wheat, barley, beans, oats, turnips, hemp, and hops.

TOWNS. *Ipswich,* with extensive iron and soap manufactures, is the birthplace of Cardinal Wolsey. *Sudbury,* on the Stour, sent two members to the House of Commons, but was lately disfranchised for bribery. *Woodbridge;* an active trade in shipbuilding, *Lowestoft,* the most eastern town in the British Isles. *Bury St Edmund's* has a large corn and cattle market, which lasts for three weeks.

7. **Essex,** between the Stour and the Thames.—G.C.: Almost wholly tertiary; surface flat and marshy in the S., but richly wooded and beautifully diversified in the centre and N.; soil rich, and famous for its wheat crops.

TOWNS. *Chelmsford,* at the confluence of the Chelmer and Cann, and on the Eastern Union Railway. *Maldon* exports fish and agricultural produce. *Saffron-Walden,* so named from the *saffron* plant, formerly cultivated here. *Colchester,* on the Colne, crossed here by seven bridges, famous for its oyster-fisheries. *Halstead,* with manufactures of silks, velvets, satins, and straw plait. *Harwich,* a seaport at the mouth of the Stour, has the finest harbour on the east coast of England.

8. **Kent,** between the Thames and the Rother.—G.C.: Tertiary in the N., chalk and greensand in the centre and E., and the wealden, a fresh-water deposit, in the S.; surface hilly—two small ranges traverse the county from W. to E.—but the S. low and level, containing Romney Marsh and "the Weald;" soil and climate excellent, and agriculture in a highly advanced state, with

products more varied than any other English county ; wheat, barley, and hops of very superior quality, and numerous orchards of cherries, plums, and filberts.

TOWNS. *Maidstone*, on the Medway, the chief seat of the hop trade. *Sheerness*, *Chatham*, *Woolwich*, and *Deptford*, with royal dockyards and arsenals. *Tunbridge*, so named from having a bridge over the Tun, one of the arms of the Medway. *Tunbridge Wells*, with medicinal waters, a fashionable resort for the Londoners. *Hythe*, *Dover*, *Romney*, and *Sandwich*, four of the Cinque Ports (Hastings in Sussex being the fifth). *Folkestone*, the birthplace of Harvey, the discoverer of the circulation of the blood. *Dover*, on the Strait of Dover, is only 21 miles from the French coast, and is the chief point of communication between England and the Continent. *Deal*, near the Goodwin Sands, maintains a numerous staff of pilots for steering vessels through the Downs. *Ramsgate*, *Margate*, and *Gravesend*, convenient resorts for the population of London. *Canterbury* may be called the ecclesiastical capital of England, was a place of some importance in the time of the Romans, and afterwards the capital of the Saxon kingdom of Kent. The Archbishop of Canterbury is the primate of England, and, after the royal family, ranks as the first peer of the realm. *Greenwich* is celebrated for its naval hospital, and its royal observatory from which the longitude in all British maps and charts is reckoned.

9. **Sussex** ("South Saxons"), between the Rother and Chichester harbour.—G.C. : The wealden in the N. and E., greensand, chalk, and tertiary in the W. and S. ; surface diversified ; "the Weald" is level, moderately fertile, and from time immemorial famous for its forests ; the South Downs—a range of chalk hills—traverse the cretaceous portion from W. to E., terminating at Beachy Head. South of the Downs there is a considerable tract of fertile soil belonging to the tertiary formation. Climate mild, and harvests early, but agriculture in a rather backward state ; hops extensively raised in the E. The breeds of cattle and sheep are in high repute.

TOWNS. *Chichester*, on the Lavant, in the S.W. of the county, occupying a fine situation at the foot of the South Downs, is the birthplace of William Collins. *Brighton*, a romantic and beautiful town, the gayest of English watering-places, with an extensive marine promenade. *Hastings*, the principal of the Cinque Ports, the scene of a famous battle, in 1066, between Harold II., the last Saxon king, and William the Conqueror. *Lewes*, where Simon de Montfort and the barons defeated Henry III. in 1264. *Rye*, once on the sea margin, is now considerably inland.

10. **Surrey**, between Sussex and the Thames.—G.C. : Weald in the S., greensand and chalk in the centre, and tertiary in the N. The North Downs run from W. to E. ; the W. largely covered with heath, but fertile soil in the tertiary part. A large portion under tillage, and hops extensively raised ; another large portion laid out as kitchen-gardens for supplying the metropolis with vegetables ; woods extensive, but agriculture backward.

TOWNS. *Guildford*, on the Wey, and 17 miles from London, has considerable traffic in corn, malt, and coals. *Deptford*, partly in Kent, with large naval arsenal and dockyards. *Southwark* and *Lambeth* now form parts of London ; in the latter is Lambeth Palace, the residence of the Archbishop of Canterbury. *Richmond*, with a celebrated park, is the burial-place of Thomson the poet and of Kean the tragedian. *Kingston*, where the first armed force in the Parliamentary war assembled. *Croydon*, near which is Addiscombe, a military college of the East India Company, with fourteen professors.

11. **Berks**, between Hampshire and the Thames.—G.C.: Coral rag in the N., greensand and chalk in the centre, and tertiary in the S. A tract of chalk downs extends through the centre; Windsor forest and park in the E.; soil fertile; agriculture backward; manufactures unimportant, but extensive trade in agricultural produce.

TOWNS. *Reading*, the birthplace of Archbishop Laud. *Newbury*, celebrated for its serges and shalloons. *Windsor*, celebrated for its palace and park; the former, the most magnificent regal palace in the kingdom, was founded by the Conqueror, and is the favourite residence of the sovereign; and the latter, containing Windsor Forest, is 56 miles in circumference.

12. **Hants**, chiefly included between Chichester Harbour and the Hampshire Avon.—G.C.: Chalk in the N., tertiary in the S. The North and South Downs traverse the county, and the south coast is deeply indented; for the most part well wooded, and has extensive forests of oak and birch; soil good, and generally well cultivated, producing excellent hops; its cider and bacon in high repute. The Isle of Wight, which is tertiary in the N. and greensand and weald in the S., is considered the garden of England.

TOWNS. *Winchester*, between the Itchin and Test, was long the capital of England; and here many of the Saxon princes are interred. *Southampton*, a favourite resort for sea-bathing; here the mails are made up and despatched to the East and West Indies, China, and the Mediterranean. *Andover*, one of the largest cattle-markets in England. *Portsmouth*, the headquarters of the British royal navy, with extensive dockyards and arsenal; the harbour unequalled in the kingdom, and the fortress considered impregnable. *Gosport* has a large hospital for sick and wounded seamen. *Newport*, the capital of the Isle of Wight, on the river Medina.

13. **Wilts**, N.W. of Hants and S. of the Thames.—G.C.: Oolitic in N. and W., cretaceous in the S. and E. The centre is occupied by the elevated table-land of Salisbury Plain, in which nearly all the rivers of the county rise; soil highly fertile, especially in the extreme N. and S., but the central plateau produces only scanty herbage, which is well adapted for sheep; the most remarkable features here are the far-famed Druidical remains of Stonehenge and Avebury, on which much antiquarian research has been somewhat unsuccessfully expended.

TOWNS. *Salisbury*, with a magnificent Gothic cathedral; the spire, the highest in Britain, rises to a height of 404 feet. *Devizes*, *Bradford*, *Trowbridge*, *Chippenham*, *Warminster*, and *Westbury*, have extensive manufactures of woollens and fine cloths. *Wilton*, from which the county derives its name, is noted for its carpets. *Amesbury*; near it are Stonehenge, and Milston Rectory, the birthplace of Addison.

14. **Dorset** on the East Channel, for the most part between the Hampshire Avon and the Lyme.—G.C.: Cretaceous in the E., and

oolitic in the W. Surface level in the N., but traversed by chalk hills in the centre, where numerous flocks of sheep find pasture; extensive heaths in the S. Dairy produce highly important, and large commerce in Portland and Purbeck stone, coarse marble, and potter's clay.

TOWNS. *Dorchester,* on the Frome, a place of great antiquity, with the remains of a huge Roman amphitheatre. *Poole,* a large seaport, chiefly engaged in the Newfoundland fishery. *Bridport;* shipbuilding, cordage, fishing-nets, and sailcloth. *Sherborne,* the birthplace of Sir W. Raleigh.

15. **Somerset,** between Dorset and the Bristol Channel.—G.C.: Greatly diversified, and embracing all the formations from the Old Red to the oolite. Coast-line and surface irregular: the Mendip and Quantock hills divide the county into three divisions: fertile along the rivers, and there dairy husbandry is pursued with great success; but in other parts there are extensive wastes, as Exmoor in the W. Coal, calamine, and fuller's earth are obtained: the principal manufactures are woollens, silks, linens, paper, glass, and ironwares. Many antiquities.

TOWNS. *Bath,* on the Lower Avon, long the most fashionable watering-place in the kingdom, is one of the most beautiful cities in Europe. *Frome,* long noted for its ale. *Wells,* with a noble cathedral, erected in the thirteenth century. *Bridgewater,* the birthplace of Admiral Blake, is noted for its high tides. *Taunton,* where Judge Jeffreys held the bloody assize after the battle of Sedgemoor. *Wellington,* from which the late celebrated Duke of Wellington derived his title; near it is an obelisk 120 feet high, commemorating his victory at Waterloo. *Weston-super-Mare,* from an insignificant village, has risen into a favourite watering-place. *Bruton,* birthplace of the navigator Dampier.

16. **Devon,** between the English and Bristol Channels.—G.C.: The centre and W. carboniferous; the S. and extreme N., Devonian; New Red and greensand in E.; surface greatly broken, but generally fertile, except Exmoor and Dartmoor. The climate in winter is very mild, the average temperature being 44°. Most kinds of grain are raised, and the county is famed for its cider. The red Devon breed of cattle is highly valued. Mines of copper and tin extensive; and herring, pilchard, mackerel, and dory fisheries important.

TOWNS. *Exeter,* on the Ex, a fine old town with a beautiful cathedral, and the birthplace of the poet Gay. *Plymouth* and *Devonport,* closely contiguous, are principal stations of the royal navy; noted for naval arsenal, and for a stupendous breakwater which cost £1,200,000. *Tavistock,* the birthplace of Sir Francis Drake, and of William Browne the poet. *Torquay* (Tor-kee), on Tor Bay, the resort of numerous invalids. *Barnstaple* has considerable trade in timber with Canada and the Baltic.

17. **Cornwall,** in the extreme S.W. of the kingdom.—G.C.: Devonian for the most part, interspersed with igneous rocks: but carboniferous in the N.E.; surface rugged; soil indifferent; scantily timbered; climate mild, salubrious, but very humid. Its tin mines are the most celebrated in the world, and have been wrought from remote antiquity. The metalliferous district extends from Dartmoor, in Devonshire, to the Land's End; but the richest mines are in the

S.W. of the county. Copper is also abundant; and lead, silver, zinc, iron, manganese, antimony, cobalt, and bismuth exist in many localities.

TOWNS. *Bodmin,* on the Camel, engaged in the manufacture of coarse woollen stuffs. *Camborne, Redruth,* and *Marazion,* with valuable copper mines. *St Ives, St Just,* and *St Austell,* famous for their unrivalled tin mines. *Penzance, Truro, Launceston,* and *Lostwithiel,* are called the "Stannery towns," being those to which the miners carry their blocks of tin, in order to be stamped by Government agents. *Helstone* extensively imports iron, coal, and timber. *Falmouth,* a favourite resort of our fleets in time of war, and a mail-packet station. *Penryn* manufactures paper, woollen cloth, arsenic, and gunpowder. *Liskeard* carries on tanning extensively.

18. **Monmouth,** between the Wye and the Rumney.—G.C.: Devonian for the most part, but carboniferous in the extreme W. and E.; surface picturesquely varied with hill and dale, and finely wooded; coal, ironstone, and limestone abundant; flannel the chief manufacture; many British and Roman remains; the Welsh language and manners prevalent; and in general the county may be considered as rather Welsh than English.

TOWNS. *Monmouth,* on the Wye, the birthplace of Henry V. and of Geoffrey of Monmouth the annalist; with extensive manufactures of bar-iron, tin-plates, and paper. *Chepstow,* noted for its high tides, which rise from 50 to 70 feet, is surrounded by delightful scenery. *Newport* exports coal, iron, and tin, which are conveyed hither from South Wales; large trade in shipbuilding and iron-foundries. *Abergavenny* (Aber-gá-ny), once famous for the manufacture of wigs, is surrounded by charming scenery. *Tredegar,* noted for its coal-mines and ironworks.

19. **Hereford,** in the basin of the Severn.—G.C.: Almost wholly Devonian; surface beautifully diversified, and presenting some of the finest scenery in England, especially in the Hatterel range of the Black Mountains in the S.W., and in the Malvern Hills in the E.; soil in general fertile, particularly along the rivers; climate remarkably healthy; apples, hops, and oak bark are important articles of commerce; and the breeds of sheep and cattle are celebrated for their excellence.

TOWNS. *Hereford* (Her-é-ford) on the Wye, the birthplace of David Garrick, the comedian, and of Nell Gwynn, the favourite mistress of Charles II. *Leominster* (Lem′-ster), famed for the quality of its cider, and for manufactures of leather gloves, hats, and woollen.

20. **Salop,** in the basin of the Severn.—G.C.: Silurian strata, containing lead mines in the S.W., New Red Sandstone, with rock-salt, in the N., and Devonian beds and coal in the remainder; surface mountainous in the S., comparatively level in the N.; fine meadowlands near the Severn; hops and orchards in the S., coal and iron in the E., lead in the W., and salt in the N. The manufactures are, chinaware, flannels, carpets, linen, gloves, and paper. A good deal of cheese is made, and large flocks of turkeys are reared.

TOWNS. *Shrewsbury,* on the Severn, where a bloody engagement took place, in 1403, between the troops of Henry IV. and the Percies, in which Hotspur was killed. *Bridgenorth,* extensively engaged in the carpet manufacture. *Broseley*, noted for its coal and iron mines, iron-foundries (known as the Colebrookdale works), and potteries; a suspension-bridge over the Severn was the first erected in England; near it is *Colebrookdale*, famous for its petroleum or tar springs.

21. **Cheshire**, a maritime county between the Mersey and the Dee.—G.C.: Nearly all of New Red Sandstone, containing an inexhaustible supply of rock-salt; surface level, well wooded, and studded with many small lakes; soil, clay or sandy loam; climate moist. The county is noted for its dairy produce, and especially for its cheese. Coal, copper, lead, rock-salt, and cobalt are among its mineral products, and the principal manufactures are cottons and silks.

TOWNS. *Chester*, on the Dee, exports cheese in large quantities, and is the burial-place of Matthew Henry, the commentator, and of the poet Parnell. *Birkenhead*, a new town on the estuary of the Mersey, opposite Liverpool, fast rising into importance. *Stockport* has coal abundant in the vicinity, and large manufactures of cotton, silk, machinery, brass, and iron goods. *Staley Bridge*, extensively engaged in the cotton manufacture. *Macclesfield* employs 10,000 hands in silk-weaving. *Crewe*, on the London and North-Western Railway, is a great railway depot.

22. **Lancashire**, a maritime county between the Mersey and Morecambe Bay.—G.C.: Mainly carboniferous, but New Red Sandstone in the W., lined with post-tertiary deposits; mountainous in the N. and along the E. border, elsewhere generally level; climate mild but very humid; pasture-lands more extensive than the arable; potatoes largely cultivated, and horticulture largely pursued. Copper, ironstone, and lead ore prevail extensively; but the county owes its celebrity, wealth, and population to its manufactures and commerce. It is the grand seat of the cotton manufacture, which has increased since 1770 with a rapidity altogether unparalleled in the history of industry. Woollen, flax, and silk factories are also numerous. During the last hundred years the population has increased eightfold. A complete network of railways, and several important canals, afford means of rapid conveyance to all parts of the kingdom. Population, 2,031,000.

TOWNS. *Lancaster*, on the Lune, with a superb aqueduct over the river. *Liverpool*, a large and flourishing city, and the second commercial port in the kingdom, is situated on the estuary of the Mersey, about four miles from its mouth, and 32 miles from Manchester, with which it is connected by a railway. It carries on a vast maritime trade, especially with the United States, importing thence cotton wool, and exporting cotton cloth. In 1851 no fewer than 21,000 ships entered the port, with a tonnage of 3,737,000 tons: value of imports about £37,000,000; exports, £35,000,000. Liverpool is the chief outlet for the manufactures of Lancashire, Staffordshire, and the west of Yorkshire. *Manchester*, on the Irwell, across which it communicates by six bridges with *Salford*, which may be regarded as its suburb; united population, 401,000. It is the great centre of the cotton manufacture, and probably the greatest manufacturing city in the world. In 1853 there were 233 factories in operation, some of which are seven or eight stories high, employing 42,000 persons. The other principal "cotton towns" in the county are *Preston, Blackburn, Burnley, Wigan, Chorley, Ashton-under-Lyne, Oldham, Bury, Middleton, Bolton,* and *Rochdale.*

23. **Westmoreland,** between the Pennine Hills and Morecambe Bay, is only very partially a maritime county.—G.C.: Cumbrian strata in the W., silurian in the centre, carboniferous in the E., and Permian in the N.; a country of mountains, lakes, and picturesque scenery; climate humid; soil various, and agriculture improving; cattle of large size, sheep numerous, their wool being sent to the Yorkshire woollen manufactories; great flocks of geese raised for exportation; slate is quarried in great quantities, as also granite, marble, copper, and lead; char, and other lake fish, extensively exported.

TOWNS. *Appleby,* on the Eden; the castle held out long against the Parliamentary army under Oliver Cromwell. *Kendal,* on the Ken, one of the oldest manufacturing towns in the kingdom; its cloths, manufactured by Flemish weavers, were famous in the time of Richard II.

24. **Cumberland,** a maritime county in the extreme N.W., between the Pennine chain and the Irish Sea.—G.C.: An extensive area of Cumbrian strata in the S., with igneous rocks interspersed; carboniferous, Permian, and triassic in the centre and N.; surface rugged and mountainous, interspersed with beautiful lakes, presenting the most magnificent scenery in England. Climate extremely moist: Seathwaite, where 140 inches of rain fall annually, is perhaps the rainiest district in Europe. In consequence of this extreme moisture, agriculture is chiefly confined to stock-breeding; and green crops attain to great perfection, especially Swedish turnips. Principal minerals are silver, copper, lead, iron, and coal. Near Whitehaven and Newington are extensive beds of coal, and at Borrowdale there is a mine of plumbago or graphite. The chief manufactures are cottons, coarse linens, checks, and woollens; and the lakes yield abundance of char, trout, pike, and perch.

TOWNS. *Carlisle,* on the Eden, surrendered to the Highland army under Prince Charles, in 1745. *Penrith* has manufactures of cotton, linen, and woollen goods. *Whitehaven* exports great quantities of coal, and of the iron-ore called hematite: the coal-mines extend a long way under the sea. *Maryport* and *Workington* have considerable trade in coal. *Cockermouth,* the birthplace of the poet Wordsworth. *Keswick* manufactures black-lead pencils from the plumbago mines of Borrowdale. Here Southey the poet spent his last years and died.

25. **Derby,** a central county in the basin of the Trent.—G.C.: Chiefly carboniferous, but New Red Sandstone in the S. Surface mountainous in the N., where the Pennine range terminates in the Peak of Derby; elsewhere level. The Peak district abounds in romantic scenery, in natural curiosities, and in lead-mines. Climate bracing and salubrious; soil reddish clay or marl in the S., where grain and great quantities of cheese are produced. The county is singularly rich in minerals; coal, lead, iron, gypsum, and marble are wrought to a great extent; zinc and copper are also found. Collieries and ironworks numerous; principal manufactures, silk, cotton, metallic goods, and porcelain.

TOWNS. *Derby,* on the Derwent, at the extremity of a coal-field, and on the Midland Railway, is favourably situated for manufactures and trade—noted for its silks, porcelain, marble and fluor-spar ornaments. *Belper,* with large cotton-factories and potteries. *Alfreton,* with manufactures of stockings and pottery. *Chesterfield,* lace and silk manufactures; with mines of iron, coal, and lead in the vicinity. *Matlock* and *Buxton,* celebrated for their mineral waters; and *Wirksworth,* with an extensive and valuable lead-mine.

26. **Notts,** a central county in the basin of the Trent.—G.C.: Coal and Permian in the W., lias in S.E., and millstone grit in the remainder. Surface diversified; climate remarkably dry, probably owing to the Derbyshire hills intercepting the moist S.W. winds; soil either clayey or light and sandy; agriculture well advanced; minerals abundant, especially coal and limestone. It is the principal seat of the cotton hosiery, and of lace-manufactures.

TOWNS. *Nottingham,* on the Trent, is the great centre of the lace and bobbin-net manufacture. *Newark,* where Charles I., after his defeat at Naseby, surrendered himself to the Scottish army. *Mansfield,* manufactures of cotton hosiery and lace, and a large trade in malt. *Worksop,* in a district called "The Dukery," a number of noblemen having their mansions here.

27. **Stafford,** a central county in the basins of the Trent and Severn. —G.C.: Principally carboniferous, but New Red Sandstone in the centre; surface level in the centre, hilly in the S., moorland in N.E. Climate chilly, owing to the elevation; much rain in some parts; two-thirds of the surface cultivated, but farming less important than the mining operations, in which this county holds the third rank in England. There are two very valuable coal-fields, one in the N., called the pottery coal-field, owing to the great number of potteries that have been established on it; and the other in the S., called the Dudley coal-field, celebrated for the thickness of its seams of coal, and for the excellence and richness of its iron ores. Besides coal, the most important mineral product is the pottery clay, which has made the county so celebrated for its earthenware.

TOWNS. *Stafford,* on the Sow, the birthplace of Isaac Walton. *Burton-on-Trent,* famous for its ales, has a bridge over the river reckoned the longest in England, with thirty-seven arches. *Newcastle-under-Lyne,* noted for its hats—near it *Etruria,* the famous pottery establishment of Josiah Wedgewood. *Stoke-upon-Trent, Hanley,* and *Burslem,* with some other towns in the vicinity, are called "The Potteries," owing to their immense manufacture of earthenware. *Lichfield,* the birthplace of Samuel Johnson. *Tamworth,* long represented in Parliament by Sir R. Peel, the eminent statesman. *Walsall* and *Bilston,* with great iron-works. *Wolverhampton,* noted for its hardware manufactures.

28. **Leicester,** an inland county in the basin of the Trent.—G.C.: Some coal in the W.; New Red, with igneous rocks, in the centre, and lias in the E. Surface undulating—a fine grazing county, noted for its sheep, horses, and cattle, and for Stilton cheese. It is the

principal seat of the woollen hosiery manufacture. The principal minerals are coal, iron, and lead.

TOWNS. *Leicester* (Leester), on the Soar, the principal seat of the woollen hosiery manufacture, which employs 25,000 hands. *Loughborough*, hosiery of all kinds. *Hinckley*, cotton and worsted stockings. *Melton-Mowbray* has the largest cattle-market in England. *Ashby*, where Mary Queen of Scots was imprisoned.

29. **Rutland**, the smallest county in England, in the basins of the Trent and Welland.—G. C.: Lias in the western half, and oolite in the eastern. Surface undulating and diversified with parks; the eastern half chiefly under tillage, and western half under pasture; soil everywhere loamy and rich; great attention is paid to the rearing of choice sheep and oxen. There are quarries of good building-stone and of limestone.

TOWNS. *Oakham* on the Wreak, has a fine old church, and manufactures silk shag for hats. *Uppingham*, a small town on the Welland, with no manufactures.

30. **Worcester**, an inland county in the west of England, in the basin of the Severn.—G. C.: New Red in W., lias in centre, and oolite in the E.; some coal found in N. Surface generally level, but having the Malvern Hills in S.W. and the Bredon Hills in S.E. Soil fertile, well watered, and richly wooded; wheat and hops extensively raised, and orchards numerous. Principal minerals are coal, found at Dudley, building-stone, and clay. The New Red at Droitwich contains brine springs. Manufactures are carpets, glass, and iron-ware, gloves, porcelain, needles, and fish-hooks.

TOWNS. *Worcester* (Wŏrster), on the Severn, a handsome and very ancient city, noted for its porcelain, reckoned the finest in England. *Bewdley*, manufactures of combs and carpets. *Evesham* (Eesham), in the vale of the Upper Avon, here navigable. *Droitwich*, with brine springs producing a great quantity of salt. *Kidderminster*, producing the finest carpets in England. *Stourbridge* has manufactures of glass and earthenware. *Dudley*, with a famous coal-field, part of which has been on fire for a century, is one of the principal seats of the iron trade.

31. **Warwick**, in the basins of the Severn and Trent.—G. C.: Lias in S., New Red in the centre, and carboniferous and Permian in the N. Surface elevated, and diversified by gentle hills and vales; climate mild and salubrious; soil generally very fertile and well cultivated, and a great part of it in permanent pasture. The most valuable minerals are coal, limestone, sandstone, blue flagstone, and marl. Manufactures very important, especially hardware, arms, watches, jewellery, silk, and ribbons.

TOWNS. *Warwick*, on the Upper Avon: the castle, once the residence of the Earl of Warwick, is the most complete specimen of a feudal fortress in the kingdom. *Stratford*, also on the Avon, the birthplace of the immortal Shakespeare. *Rugby*, with a celebrated school, the scene of Dr Arnold's labours. *Leamington*, a fashionable watering-place, with sulphureous, saline, and chalybeate springs. *Coventry* and *Nuneaton*, the chief seat of the ribbon manufacture. *Birmingham* on the Rea, an affluent of the Thame, and a sub-tributary of the Trent, is the second for manufactures in England, and for hardwares the first in the world. It has been called "the great toy-shop of Europe," but it is equally famous for all descriptions of hardware, firearms, and crown-glass. It is surrounded by extensive coal-pits and iron-works, and is one of the main centres of canal and railway communication in England. Here electro-plating was invented; and at Soho in the vicinity is the greatest manufactory of steam-engines in the world, conducted by a firm of which the celebrated James Watt was a partner.

32. **Northampton**, a central county, drained by the Nene for the most part, but partly also by the Welland and Ouse.—G. C.: Almost wholly oolite and lias. Surface diversified and richly wooded; soil mostly a stiff productive loam; climate healthy; agriculture well advanced, the chief staple being the breeding of heavy black horses, short-horned cattle, and sheep; chief manufactures shoes, bobbin-lace, and woollen stuffs.

TOWNS. *Northampton,* on the Nene, the chief seat of the boot and shoe manufacture. *Peterborough,* the birthplace of Dr Paley; the cathedral, a splendid edifice, contains the tomb of Queen Catharine, first wife of Henry VIII. *Wellingborough* and *Daventry,* with boot, shoe, and lace manufactures. *Kettering,* silk-weaving, plush, and wool-combing. *Daventry,* the principal place in the county for horse-dealing. *Naseby,* a country parish, 12 N.N.W. of Northampton; here in 1645 the troops of Charles I. were totally defeated by the Parliamentary army. *Fotheringay,* 3½ miles N.N.E. of Oundle; its castle is famous as the birthplace of Richard III., and as the scene of the imprisonment, trial, and execution, in 1587, of Mary Queen of Scots.

33. **Huntingdon**, sometimes called Hunts, an inland county in the basin of the Ouse.—G.C.: Almost wholly oolitic, but post-tertiary in N.E. Surface gently varied where the oolite prevails, the rest level, and forming a part of "The Fens." Climate mild and healthy, except in the fens; soil good and almost wholly under cultivation, with agriculture in an advanced state, especially in the Bedford Level or fens district; horses extensively bred, and much "Stilton cheese" made. Manufactures unimportant.

TOWNS. *Huntingdon,* on the Great Ouse, the birthplace of Oliver Cromwell in 1599; has extensive breweries, and considerable trade in corn, wool, coals, and timber. *St Ives,* large sheep- and cattle-markets. *St Neots,* large manufactures of paper.

34. **Cambridge**, in the basins of the Great Ouse and Nene.—G. C.:—Post-tertiary in the N., oolitic in the centre, greensand and chalk in the S. and E. Surface level, marshy, and thinly wooded, and the fens liable to inundation; about a third of the county under tillage, the rest forming excellent pasture. The butter of Cambridge and Epping, and the cheese of Cottenham, are highly valued; but, on the whole, agriculture is rather backward, and the houses of the peasantry wretched: with the exception of some pottery-ware, there are no important manufactures.

TOWNS. *Cambridge,* on the Cam, is the seat of a celebrated University, founded in the seventh century, and consisting of seventeen colleges and four halls. It is principally renowned for Mathematics and Natural hy. *Newmarket*, famous for its great race-courses: a half of the on, it is said, consists of jockeys, grooms, trainers, and stable-keepers. *Ely*, a bishop's See, with a splendid cathedral—the only city in England which sends no member to Parliament; manufactures earthenware and tobacco-pipes. *Wisbeach, March*, and *Whittlesea*, in the Fens; the drainage, once carried on by wind-mills, is now conducted by steam-engines.

35. **Gloucester**, in the basin of the Severn.—G.C.: Principally oolite and lias, but carboniferous and New Red in the W.; naturally divided into three divisions—viz. the valley of the Severn in the middle, the Cotswold Hills in the E., and the forest of Dean in the W. The first is highly fertile, and the scenery beautiful; the second is celebrated for its sheep-farming. The county is also noted for its cheese, which is nowhere surpassed. The principal minerals are coal and iron-ore; and the manufactures are chiefly woollen and cotton cloth.

TOWNS. *Gloucester* (Glos'-ter), on the Severn, has a fine cathedral, and manufactures of cutlery, soap, and pins. *Tewkesbury*, the scene of a decisive battle between the houses of York and Lancaster in 1471. *Bristol*, on the Lower Avon, is the third seaport in England. The fine flannels of Wales are finished here; extensive iron and brass foundries; and it is the birthplace of many eminent persons, among whom William of Worcester, Sebastian Cabot, Chatterton, Bayley, and Southey, the late poet-laureate. *Stroud*, on a river of same name, the water of which is peculiarly adapted for dyeing scarlet, is the centre of the Gloucester wool-manufacture. *Cheltenham*, with its saline medicinal springs, is the rival of Bath as a watering-place. *Cirencester* (Sis'-e-ter), a very ancient town, had some importance in the time of the Romans. *Berkeley*, the birthplace of Dr Edward Jenner, the discoverer of vaccination, born in 1749.

36. **Oxford**, in the Thames basin.—G.C.: Principally oolite and lias, but greensand and chalk in the S.E.; surface mostly level or undulating, except in the S., where it is traversed by the Chiltern Hills; soil a fertile loam in the N., elsewhere gravelly; four-fifths of the county under cultivation; stock of sheep large; dairy produce excellent; minerals unimportant; manufactures lace, gloves, and blankets.

TOWNS. *Oxford*, on the Cherwell, with an observatory, and a celebrated university consisting of nineteen colleges and five halls, principally renowned for classical learning; annual revenue £457,000. The Bodleian library contains 220,000 printed, and 20,000 MS. volumes. *Banbury*, noted for its cheese, and for cakes, which bear its name. *Woodstock*, celebrated for its gloves; gives name to one of Scott's novels: near it Blenheim, the magnificent seat of the Duke of Marlborough.

37. **Bucks**, in the basins of the Great Ouse and Thames.—G.C.: Oolite in the N., greensand and chalk in the S.; surface undulating in the N., occupied by the Chiltern Hills in the S.,* and in the centre

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* The office of Steward of the Chiltern Hundreds, though now a sinecure, is still retained, to enable members of the House of Commons to vacate their seats by accepting it, as it is unconstitutional for members to demit their office more directly.

by the rich vale of Aylesbury, one of the most fertile in the kingdom; well wooded; yields large quantities of butter and cheese, with sheep and poultry—the sheep being noted for the weight and fineness of their fleeces; minerals of little importance, but manufactures considerable, consisting of paper, straw-plait, and thread-lace.

TOWNS. *Buckingham,* on the Great Ouse, which nearly surrounds it has manufactories of paper and bobbin-lace; near it is Stowe, the splendid residence of the Duke of Buckingham. *Eton,* with a celebrated college, founded by Henry VI. in 1440. *High Wycombe;* manufactures, paper and chairs. *Great Marlow,* silk, lace, and paper. *Aylesbury,* on the Thame, and in the centre of the county, has a better right than Buckingham to be regarded as the county town, for the quarter-sessions, the Lent assizes, and the county jail, are all here, and it is also the place where the county members are nominated. The summer assizes are, however, held at Buckingham.

38. **Bedford,** in the basin of the Great Ouse.—G.C.: Oolite in the N., greensand and chalk in the S.; surface level, except around the Chiltern Hills in the S.; soil various, from the stiffest clay to the lightest sand; chiefly under tillage, but agriculture not in an advanced state; culinary vegetables extensively cultivated in the sandy and chalky districts for the London and Cambridge markets; onions and cucumbers of the best quality are extensively raised; minerals unimportant; and the manufactures chiefly consist of straw-plait for hats, reckoned but little inferior to that brought from Tuscany, and of pillow-lace.

TOWNS. *Bedford,* on the Great Ouse, noted for its straw-plaiting; near it *Elstow,* the birthplace of John Bunyan; and *Cardington,* where John Howard resided. *Biggleswade, Leighton-Buzzard, Dunstable,* and *Luton,* all extensively engaged in the straw-plait and straw-hat manufacture. *Woburn,* near which is Woburn Abbey, the splendid seat of the Duke of Bedford.

39. **Herts,** in the basins of the Thames and Great Ouse.—G.C.: Nearly all cretaceous, but tertiary in the S.; soil various, often intermixed with flint, and of average fertility; climate salubrious; principal crops, wheat, barley, turnips, apple and cherry orchards; minerals of no importance; and principal manufactures paper and straw-plait.

TOWNS. *Hertford,* on the Lea; near it Haileybury College, where, till 1858, young men were trained for the service of the East India Company. *Ware,* at the head-springs of the New-River, which supplies the north of London with water. *St Albans,* an ancient town, was the scene of two battles between the rival houses of York and Lancaster; the church contains the remains of the celebrated Francis Bacon, Lord Verulam.

40. **Middlesex,** in the Thames basin; area, 282 square miles; population, 1,886,000.—G.C.: Wholly tertiary, being the lower eocene or London clay, which consists of a tenacious brown or bluish-grey clay replete with fossils, especially at Highgate Hill, near London; surface almost perfectly level, except the slight eminences of Hampstead, Highgate, and Harrow-on-the-Hill; soil various, mostly gra-

velly, not very fertile naturally, but enriched by the profuse application of manure; agriculture in a backward state, but improving through the efforts of Mr Mechi of Tiptree Hall, and others; grass-farms, for the supply of London with hay and milk, greatly exceed in extent the arable portion; market-gardens extensive, and a large portion occupied by villas, commons, and pleasure-grounds; minerals of no importance, except vast quantities of clay and earth for brick-making.

TOWNS. *London*, on the Thames, the capital of England, and the metropolis of the British empire, is probably the largest, and certainly the wealthiest and most commercial city in the world. It is 10 miles long, 7 miles broad, and occupies 32 square miles. Population, 2,027,000; but including the 15 cities and towns enumerated at p. 126, all of which are in or very near it, the population is 2,362,000, occupying a surface of 116 square miles. This immense population is equal to that of the entire kingdom of Scotland in 1831. There are 686 churches and chapels, 250 public and 1500 private schools, 150 hospitals, 156 alms-houses, 250 other institutions of a similar character, 550 public offices, 14 prisons, 22 theatres, 24 markets, 77,000 establishments of trade and industry, besides an immense number of public-houses, hotels, eating-houses, and beer-shops. The houses in the city form upwards of 60 miles of streets, and are in general from 3 to 5 stories high, yielding a rental of £7,000,000 sterling; assessed taxes, £650,000. The exports in 1850 amounted to £14,137,000, and the imports to £80,000,000; customs revenue, £11,000,000; sailing ships, 2735; steamers, 318; aggregate burden, 667,000 tons.

There are seven bridges across the Thames—viz. London, Southwark, Blackfriars, Waterloo, Hungerford, Westminster, and Vauxhall bridges; and two miles below London Bridge is the tunnel under the bed of the river. The most conspicuous public buildings are St Paul's Cathedral (a noble structure of Grecian architecture, 510 feet long, 250 broad, with a dome 370 feet high); the Mansion House; the Bank; Royal Exchange; General Post-Office; India, Custom, and South-Sea Houses; Mint; Christ's and Bartholomew's Hospitals; Westminster Abbey; Houses of Parliament; National Gallery; British Museum; University College and Hospital; Somerset House and King's College; St James's and Buckingham Palaces. Among its principal scientific associations are the Royal Society, Royal Antiquarian, Linnean, Horticultural, Medical and Chirurgical, Geological, Geographical, Astronomical, Asiatic, Zoological, Ethnological, and Statistical Societies. There are 10 daily newspapers, and 80 others, with 320 other periodicals.

Breweries and distilleries on an immense scale form the most important articles of manufacture; but Southwark and Lambeth are the great workshops, with large iron-works, tanneries, breweries, glass-works, patent shot and steam-engine manufactories. Silk-weaving is confined to Spitalfields; watch-making chiefly to Clerkenwell; shipbuilding to Wapping, Rotherhithe, Deptford, and Blackwall; cutlery of the finest quality is produced in many parts.

In Druidical times *Londinium* was first the capital of the Cantii, and afterwards of the Trinobantes. It was called *Augusta* in Roman times, and was the central point from which all the Roman roads in Britain diverged. After the departure of the Romans, it was the capital of the East Saxons till A.D. 804, when it became the capital of England under Alfred the Great. It obtained its first royal charter from William the Conqueror in the eleventh century; in 1664 the great plague cut off 100,000 of the inhabitants, and two years afterwards it was nearly all destroyed by fire.

The other towns in Middlesex are of little importance. *Fulham*, the site of the palace of the Bishop of London. *Brentford*, the nominal capital of the county Middlesex, at the confluence of the Thames and the Brent, is the place where the members of Parliament for the county are elected. *Blackwall*, 4 miles from St Paul's Cathedral; here are the East and West India docks. *Chelsea*, 4½ miles from St Paul's, noted for its hospital for superannuated soldiers; has 550 in-pensioners, and from 70,000 to 80,000 out-pensioners; annual expenditure nearly £1,500,000, defrayed by parliamentary grant. *Kensington*, a suburb of London, with a royal palace and an observatory. *Hammersmith*, another suburb of London, with beautiful gardens, and a huge suspension-bridge over the Thames. For Greenwich and Woolwich, see under *Kent*.

WALES.

1. **Flint**, a maritime county in the N.E., bounded by the Dee and Clwyd.—G.C.: Carboniferous, with a patch of New Red in the N.W. Surface level in the N., and elsewhere diversified by a range of hills running from S. to N. Soil fertile in the low grounds, and but very partially under tillage. Its lead-mines are the most valuable in the empire, and those of copper and coal of great importance. Manufactures cotton and some flannel.

TOWNS. *Mold*, on the Allan, a small town, with coal and lead mines and some cotton manufactures. *Holywell*, with rich copper and lead mines, is the largest town in the county; the well, which gives the town its name, is the most copious spring in Britain, giving out twenty-one tons of water per minute. *Flint* exports coal and lead, and imports timber. *St Asaph*, with a bishop's palace.

2. **Denbigh**, a maritime county, between the Clwyd and the Conway.—G.C.: Silurian for the most part, but carboniferous and New Red on the east border; surface rugged and mountainous; soil fertile in the valleys, but in the hilly districts consisting of peat covered by heath and ling, and affording pasture to great numbers of sheep, goats, and black cattle. Principal minerals, coal, lead, iron, flint, and slates; manufactures stockings, flannels, coarse woollen cloth, gloves, and shoes.

TOWNS. *Denbigh*, on the Clwyd, with manufactories of tanning, shoemaking, and woollen plaids. *Wrexham*; paper-mills, flannel manufactories, coal and lead mines. *Llangollen*, with a noble aqueduct across the Dee for the Ellesmere Canal; it has fifteen arches, and is 126 feet high; a castle of great antiquity. *Abergeley*, a resort for sea-bathing.

3. **Caernarvon**, a maritime county, between the Conway and the Irish Sea.—G.C.: Silurian; surface the most mountainous in South Britain, being traversed by the Snowdon range, 3571 feet high; but many tracts of low and fertile land, affording excellent pasturage. The chief branch of rural industry is dairy produce and the rearing of cattle and sheep. Its slate quarries are the most

valuable in Britain; other minerals are copper and lead, which are wrought pretty extensively.

TOWNS. *Caernarvon*, on the Menai Strait, exports slate and copper ore; has an ancient castle erected by Edward I. to secure his conquest of Wales. *Bangor*, also on the Menai Strait, with two extraordinary viaducts, each of which is a triumph of engineering skill. One of these is a huge suspension-bridge, the noblest in the world, 560 feet long, with the roadway 100 feet above high-water mark; the other, a gigantic tubular bridge, forming a part of the Chester and Holyhead Railway, called the Britannia Bridge, consisting of two lines of iron tubes, each 1513 feet long, supported on three towers, and 100 feet above the sea-level. *Llanrwst* contains the tomb of Llewellyn, the last prince of Wales belonging to the Celtic race.

4. **Anglesea**, an insular county in the N.W.—G.C.: Diversified, chiefly silurian, but Devonian and carboniferous in the centre. Surface comparatively flat; climate mild, but unfavourable to the growth of timber; soil fertile and well cultivated; manufactures insignificant; minerals, copper, lead, and silver ores, coal, marble, and granite. Many Druidical remains.

TOWNS. *Beaumaris*, a fine town on the Menai Strait, much frequented as a bathing-place. *Amlwch* exports copper obtained from the Parys and Mona mines. *Holyhead*, connected with Kingston and Dublin by a submarine telegraph 70 miles long.

5. **Merioneth**, a maritime county between Caernarvon and the Dovey.—G.C.: Wholly silurian. Surface mountainous, well wooded, with fine vales and many small lakes; soil poor, and only fitted for pasture-lands. Welsh ponies, called "Merlins," are reared. Minerals, slates and lime, with some lead and copper; manufactures coarse flannels; considerable shipping.

TOWNS. *Dolgelly*, on the Gynion or Wynion, near its junction with the Maw; it came into possession of the famous Owen Glendower, a descendant of Llewellyn, the last Celtic prince of Wales, during his rebellion in 1400. *Bala*, on the lake of same name, the largest in North Wales, has some manufactures of flannels.

6. **Montgomery**, an inland county in the basin of the Severn.—G.C.: Wholly silurian. Surface mountainous and well-wooded, a small portion under tillage, the rest occupied with sheep-walks; the sheep are celebrated for their mutton and wool. Here also the famous "Merlins," a pure breed of Welsh ponies, are reared. The principal mineral is slate, and the chief article of manufacture is flannel.

TOWNS. *Montgomery*, on the Severn, the scene of the last struggle between the Welsh and the English in 1294. *Welshpool*, considered the capital of North Wales, has tanneries and wool-mills. *Newton*, with manufactures of flannels. *Llanidloes*, where Llewellyn was defeated by Edward I.

7. **Cardigan**, a maritime county between the Dovey and Teify.—G.C.: Silurian. Surface level on the coast, where the ground is highly fertile, mountainous in the interior; scarcely one-third under

cultivation; principal industry, rearing cattle; minerals, slates, silver, copper, and lead; manufactures, gloves and flannels.

TOWNS. *Cardigan*, on the Teify, exports slates, oats, and butter. *Aberystwith*, a gay bathing-place; large export trade to Liverpool. *Llanbedr* (Lampéter), with a college for the Welsh clergy.

8. **Pembroke**, a peninsular county in the S.W.—G.C: Silurian in the N., Devonian and carboniferous in the S. Mountainous in the silurian tract, but tame elsewhere; coast bold and deeply indented; climate mild and very rainy; soil everywhere fertile, but chiefly used as pasture; minerals, anthracite coal, lead, lime, slate, and marl; manufactures unimportant, but fisheries valuable.

TOWNS. *Pembroke*, on Milford Haven, with a Government dockyard, and a castle stormed by Oliver Cromwell. *Haverfordwest* (Harfordwest), on the Cleddy, has a great local trade. *Tenby*, on the south coast, a favourite watering-place; commodious and well-sheltered harbour; its church spire serves as a conspicuous landmark. *St David's*, a decayed episcopal city, with many antique buildings, a cathedral, and bishop's palace.

9. **Caermarthen**, the largest county in Wales, lying chiefly in the basin of the Towey.—G.C.: Silurian in N., Devonian and carboniferous in the S. Surface hilly, with numerous fertile valleys, and well wooded; the uplands afford pasture to herds of small cattle; minerals, iron, lead, coal, and lime; manufactures tinned iron-plates, and other articles.

TOWNS. *Caermarthen* on the Towey, one of the most flourishing towns in Wales; has a Presbyterian college, docks, and large export trade in lead, slates, bark, corn, and butter. *Llandeilo-Vawr* has rich coal and iron mines, stannaries, and manufactures of flannel. *Llanelly*, with several docks and copper-works, and a large export trade in coal.

10. **Glamorgan**, the most important county in the Principality, situated on the British Channel, between the rivers Burry and Rumney.—G.C.: Nearly all carboniferous. Surface mountainous in the N., level elsewhere; soil highly fertile; minerals, inexhaustible quantities of coal and iron, both of which are wrought on an immense scale. The coal-field is the largest, and the iron-mines the most important in the empire.

TOWNS. *Cardiff*, at the confluence of the Taff and Severn, is the principal seaport for the mineral treasures of South Wales; spacious docks. *Swansea* (in Welsh *Abertawy*, because at the *mouth of the Tawy*) is fast rising in importance: the copper ore of Anglesea, Cornwall, and Ireland is smelted and refined here. *Neath*, with iron and copper foundries and coal-mines. *Merthyr-Tydvil*, by far the largest town in Wales; though recently a small village, it has now a population of 63,000. This prosperity is owing to its position near the centre of the great coal-field of South Wales. Numerous iron-foundries and coal and iron mines; those of Dowlais alone employ 6000 men.

11. **Brecknock**, an inland county in the basin of the Severn.—G.C.: Silurian in N. and W., all the rest Devonian. Surface mountainous; the Beacon, which is the loftiest mountain in South Wales, rises to a height of 2862 feet. Soil various, and only about a half cultivated, producing oats, barley, wheat; the remainder is in

pasture, yielding wool, butter, and cheese. Minerals, copper, lead, iron, coal, and limestone, most of which are extensively wrought; manufactures, worsted hosiery and coarse woollen cloth.

TOWNS. *Brecon*, on the Usk, has extensive markets and a considerable general trade: it is of high antiquity, and was the birthplace of Mrs Henry Siddons in 1755.

12. **Radnor,** an inland county in the basin of the Severn.—G.C.:-Wholly silurian. Surface mountainous, except in the S.E. Staple products, sheep of a small hardy breed, and cattle. Much of the surface is covered with bog and moorland, the ancient forests of Radnor having long since disappeared.

TOWNS. None of importance. *New Radnor*, the capital, on the Somergill, once a fortified town, is now a mere village.

8. **Capes.**—Flamborough Head and Spurn Head on the E. of Yorkshire; Gibraltar Point and Hunstanton Cliff guard the entrance of the Wash; Lowestoft Ness, in Suffolk, the most eastern point in Great Britain; Naze in Essex; North Foreland, South Foreland, and Dungeness in Kent; Beachy Head and Selsea Bill in Sussex; Dunnose Head and the Needles in Isle of Wight; St Alban's Head and Portland Bill in Dorset; Start Point and Prawle Point in Devon; Rame Head at the western entrance to Plymouth Sound; Lizard Point in Cornwall, the southernmost point of Great Britain; Land's End, the most westerly point of Great Britain; Hartland Point and Mort Point in N. of Devon, protect the entrance of Bideford Bay; Worms Head in W. of Glamorgan; St Goven's Head, St David's Head, and Strumble Head in Pembroke; Brach-y-Pwll, the most western point of North Wales; Holyhead or the Stacks, and Lines Point in Anglesea; Great Orme's Head in Caernarvon; Point of Air in Flint; St Bees Head in Cumberland.

9. **Islands.**—Holy Island or Lindisfarne, Ferne Islands, and Coquet Island on the E. of Northumberland; Mersey, Foulness, and Canvey in Essex; Sheppey and Thanet in estuary of the Thames; Isle of Wight, S. of Hants; Eddystone Rock, with a celebrated lighthouse, off Rame Head; the Channel or Norman Isles—viz. Jersey, Guernsey, Alderney, Sark, and many others, on the north-west coast of France; Scilly Islands, 140 in number, off Land's End, the principal being St Mary's and St Martin's; Lundy Island, at the entrance of Bristol Channel; Stockham, Skomer, Ramsey, W. of Pembroke; Bardsey, off Brach-y-Pwll Head; Anglesea and Holyhead, a county in N.W. of Wales; Isle of Man, a large and populous island in the middle of the Irish Sea, and the Calf of Man at its south-western extremity.

10. **Bays and Straits.**—Robin Hood's Bay and Bridlington Bay in Yorkshire; Humber Mouth, between York and

Lincoln; the Wash, between Lincoln and Norfolk; Yarmouth Roads, east of Norfolk; estuary of the Thames, between Essex and Kent; the Downs, between Kent and the Goodwin Sands; Strait of Dover, between Dover and Calais, 21 miles broad; Portsmouth Harbour, Spithead, Southampton Water, and the Solent, all S. of Hants; Poole Harbour and Weymouth Harbour, S. of Dorset; Tor Bay, Start Bay, and Plymouth Sound, S. of Devon; St Austell Bay, Falmouth Harbour, and Mount's Bay, S. of Cornwall; St Ives Bay, W. of Cornwall; Bideford or Barnstaple Bay, N. of Devon; Bristol Channel, between Somerset and Wales; Swansea Bay and Caermarthen Bay, S. of Wales; Milford Haven, St Bride's Bay, Cardigan Bay, and Caernarvon Bay, W. of Wales; Menai Strait, between Caernarvon and Anglesea; St George's Channel, between Wales and Ireland, 40 miles broad; estuaries of the Dee and Mersey, on either side of Cheshire; Lancaster Bay and Morecambe Bay, in the N.W. of Lancashire; Solway Firth, between Cumberland and Scotland.

11. **Mountain System.**—With the exception of Wales, South Britain is far from being a mountainous country. Strictly speaking, there is only one mountain-range of moderate elevation in the whole country. This range, commencing with the mountains on the Scottish border, pursues a southerly course through Derbyshire to Gloucestershire, and then deflects westward till it terminates at Land's End in Cornwall. The position of this lengthened and nearly continuous chain is a fine example of the well-known law that mountain-ranges follow the direction of the greatest length of land in which they are situated. This range is about five hundred miles long, has few interruptions, and forms the main watershed of England. Here nearly all the large rivers have their origin; and by this range, and the lateral branches which proceed from it on both sides, the direction of the rivers and the extent of the river-basins are determined. As it lies much nearer to the western than to the eastern side, the great majority of the rivers have an easterly direction. However, as there is a considerable gap about the middle of the range, and as two important rivers (the Trent and the Upper Avon) intersect it in opposite directions in that depression, it is more convenient to consider the two portions as separate and independent ranges. Then the mountains of Wales will rank as a third range; and the lateral ranges, that branch off in an easterly direction, the fourth and last.

1. The **Northern Range**, extending from the extreme N. of England to the Peak of Derby in the centre of the kingdom, embraces three different chains—viz., the Cheviot Hills, the Pennine Chain, and the Cumbrian Mountains. The *Cheviot Hills* extend about 35

miles between Northumberland and Roxburgh shires, and form the watershed between the basin of the Tweed on the one side, and those of the Aln, the Wansbeck, and the Tyne on the other. The highest summits are Cheviot Peak, 2684 feet, and Carter Fell, 2020 feet.—The *Pennine Chain* is a continuation of the Cheviots, extending from their western extremity to the Peak of Derby, 270 miles; and forming the great watershed of the North of England: it sends to the North Sea the Tyne, Wear, Tees, Yorkshire Ouse, and the left affluents of the Trent (Dove, Derwent, Idle, and Tarn); and to the Irish Sea, the Eden, Lune, Ribble, and Mersey. Principal summits, Cross Fell, Bow Fell (2911), Ingleborough, Pennigant.—The *Cumbrian Mountains*, in Cumberland, though an offshoot from the principal chain, contain the loftiest mountains in England proper. They are separated from the Pennine Chain by the Eden flowing northward, and by the Lune flowing southward—sending to the Irish Sea the Ehen, Esk, and Dudden, the Leven, Ken, and Lune, and containing the celebrated lakes which are the favourite resort of the English tourist. Principal eminences, Scawfell 3166, the highest mountain in England, Helvellyn, Skiddaw, and Saddleback.

2. The **Devonian Range** extends from the S.E. of Worcestershire, through Gloucester, Somerset, Devon, and Cornwall, and terminates at the Land's End in the extreme south-western part of the kingdom. It forms the principal watershed of the south of England, separating the great basin of the Severn, with its continuation the Bristol Channel, from the rivers that flow to the E. and S.—viz. the right-hand affluents of the Trent, those flowing into the Wash, the Thames with its tributaries, and those which find their way to the English Channel. Its different parts receive particular names. Thus:—The *Bredon Hills*, in the S.E. of Worcester, 900 feet high; the *Cotswold Hills*, in Gloucester, 1134 feet; the *Mendip Hills*, in the N.E. of Somerset, 1000 feet; the *Quantock Hills* and *Brendon Hills*, in the N. and N.W. of Somerset, from Bridgewater to Ilfracombe, 1428 feet; *Exmoor* and *Dartmoor* in Devon, where the range attains its maximum elevation in Yestor Beacon, 2077 feet; the *Cornish Mountains*, in Cornwall, where Brown Willy rises to a height of 1368 feet.

3. The **Cambrian Range**, of very irregular form, occupies the greater part of the principality of Wales. Properly speaking, it forms an offshoot from the Pennine range, and the continuity of the watershed between the two chains can be easily traced. It consists of two parallel ranges, one along the north coast of Wales, the other along the south coast, with a connecting bar between their centres, running N. and S.; the whole forming a figure like an inverted capital **I**. The *northern range* contains the highest mountains in South Britain, as Snowdon in Caernarvon, 3571 feet, the culminating-point of England and Wales; Caern-y-Llewellyn, and Caern-y-David. The *central chain*, at right angles to it, contains Cader Idris, 3550, Plynlimmon, and Arran Fowdy, all in Merioneth; and the *southern chain* has Brecknock Beacon, in Brecknockshire, 2862 feet, and the *Malvern Hills*, in Herefordshire, 1444 feet high. These last closely approach the Cotswold Hills in the De-

vonian Range, on the opposite side of the Severn, a river which rises in Plynlimmon, and derives its head-waters and right-hand tributaries from the Cambrian Range, which is therefore the connecting-link between the Pennine and Devonian ranges. In general this range forms the watershed between the Severn and Bristol Channel on the one side, and the Irish Sea on the other. The Dee, Clwyd, and Conway flow to the N., the Dovey, Ystwith, and Teify to the W., all into the Irish Sea ; the Towey, Tawy, and Taff into the Bristol Channel; the Rumney, Usk, and Wye, into the Severn.

4. The **Lateral** or **Secondary Branches** are of no great elevation; but as they play an important part in the direction of the rivers, and determine the dimensions of the river-basins, they require special attention. Nearly all of them proceed in an easterly direction from the Devonian Range. The first branches off from the Cotswold Hills in a north-eastern direction, separating Warwick and Leicester from Oxford, Northampton, and Rutland, and terminates in the N.W. of Lincoln. It divides the basin of the Humber and Trent from that of the Wash. The second diverges from the Devonian Range at Salisbury Plain, in Wiltshire, and pursues a north-eastern course till it arrives at the north coast of Norfolk : it bears different names in different parts, as the *Chiltern Hills* in Oxford and Bucks, the *Gogmagog Hills* in Cambridgeshire ; and forms the watershed between the basins of the Wash and the Thames. The third consists of a double range of chalk hills, called the *North* and *South Downs*, setting out from Salisbury Plain, and terminating, the one at Folkestone, and the other at Beachy Head. They enclose the district called "The Weald," and divide the Thames basin from the English Channel.

12. **Principal River-Basins.**—There is a necessary connection between the mountain-chains, as above enumerated, and the more or less extended valleys or river-basins lying between them. As the principal mountain-range runs from N. to S., and is situated much nearer to the west than to the east coast, it follows that all the larger rivers must have an easterly direction. The Severn, even, which is the only exception to this rule, pursues an easterly direction for a great part of its course ; and were it not for the obstacle interposed by the Cotswold Hills, which deflect it westward, it would find its way to the Thames, and empty itself into the German Ocean.

All the cities, towns, and villages of England and Wales containing upwards of 750 inhabitants—being all those enumerated in the present work, and 800 in number—stand in 100 river-basins. The following table contains 20 of these basins, being all that have any considerable magnitude. They occupy three-fourths of the entire surface, and contain 41 out of the 52 capitals. Only four of these basins are very extensive—viz., the Humber, the Wash, the Thames, and the Severn. Their combined area is reckoned at 30,000 square miles, or more than half the entire surface, and they contain twenty-eight capitals of counties. The first three slope towards the North Sea, and the fourth towards the Atlantic. In the annexed table the first column gives the name of the river-basin, the second its extreme length, the third its area in square miles, and the fourth the capitals of counties contained in the basin, together with a few other very populous cities, not capitals, the last being printed in *Italics*. The data for the area and length are furnished by "Petermann's Hydrographical Map of the British Isles."

Name of Basin.	Length in Eng. Miles.	Area in Square Miles.	Capitals of Counties, and other large Towns.	No. of Caps.
			Basins inclined to the North Sea.	
Tyne, . .	70	1100	Newcastle, ...	1
Wear, . .	67		Durham, *Sunderland*, . .	1
Tees, . .	90	744		
HUMBER and TRENT,	184	9550	Nottingham, York, Leicester, Oakham, Derby, Stafford, . *Birmingham, Sheffield, Hull, Leeds, Bradford.*	6
The WASH, or Ouse, Nen, Willand, & Witham,	160	5850	Huntingdon, Bedford, Buckingham, Cambridge, Northampton, Lincoln, . . .	6
Yare, . .	74	1180	Norwich, ...	1
Blackwater, .	46		Chelmsford, ...	1
THAMES, . .	215	6160	London, Oxford, Maidstone, Hertford, Guildford, Reading, ...	6
			Basins inclined to the Atlantic.	
Eden, . .	48	995	Carlisle, Appleby, . . .	2
Lune, . .	50		Lancaster, ...	1
Ribble, . .	60	720	*Preston, Blackburn.*	
Mersey, . .	70	1748	*Liverpool, Manchester.*	
Dee, . .	70	862	Chester, Mold, . . .	2
Teify, . .	70		Cardigan, ...	1
Towey, . .	60	506	Caermarthen, ...	1
SEVERN, . .	210	8580	Cardiff, Gloucester, Worcester, Shrewsbury, Montgomery, Brecknock, Bath, Monmouth, New Radnor, Warwick, *Merthyr-Tydvil*, ...	10
Parrot, . .	47	653	*Bridgewater, Taunton.*	
			Basins inclined to the English Channel.	
Tamar, . .	60	603	*Plymouth, Devonport.*	
Ex, . . .	60	643	Exeter, ...	1
H. Avon, .	65	1210	Salisbury, ...	2
				41

Of the four principal basins, that of the Humber and Trent is the largest, being one-sixth of the entire kingdom. It forms a quadrilateral figure, the longest side of which extends from the west of Warwickshire, a little south of the town of Birmingham, to the north frontiers of Yorkshire; on the west side, opposite Morecambe Bay, it approaches within 22 miles of the coast. It consists of three parts, viz. the Basin of the Humber proper, 1178 square miles; of the Trent, 4082 square miles; and of the Yorkshire Ouse, 4290 square miles. It is bounded on the N. by the basin of the Tees, on the W. by those of the Ribble and Mersey, on the S.W. by that of the Severn, and on the S.E. by the basin of the Wash.

The Basin of the Wash is of an irregular form, consists of the subordinate basins of the Great Ouse, Nene, Welland, and Witham, and is bounded on the N. and N.W. by the Humber Basin, on the W. by the Thames and Severn basins, on the S. and S.E. by the Thames and Yare basins.

The Thames Basin is bounded on the N. by those of the Wash and Blackwater; on the W. by the Severn Basin, from which it is separated by the Cotswold Hills; and on the S. by the slope which inclines towards the English Channel.

The Severn Basin commences at Plynlimmon, about 13 miles from the west coast; is bounded on the N. by the basins of the Dee and Mersey; on the east by those of the Humber and Thames; on the W. by the small streams that enter Cardigan Bay; and on the S.W. by those that flow into the Bristol Channel. As this Channel, however, is in reality only the estuary of this river, the real southern boundary is the Devonian range.

13. Tabular View of Rivers and Towns.—The following table, the result of much labour and research, presents in one connected view all the rivers and towns of England and Wales possessing the least degree of importance.

No fewer than 100 main rivers and 200 tributary streams are enumerated in the left-hand column; while in the other will be found 800 towns, amounting to or exceeding 750 inhabitants, including 350 large towns of 4000 inhabitants and upwards. The rivers are given in the order in which their mouths would occur to one sailing round the coast from the Solway Firth to the Tweed; and the towns and tributary rivers in the order in which he would observe them in his passage up the river. Main rivers, or those entering the sea, are placed to the extreme left, as the Sark, Eden, and Wampool; tributaries, or rivers of the second rank, one place further to the right, as the Caldew, Irthing, and Eamont; sub-affluents, or affluents of tributaries, two places to the right, as the Chor, Medlock, and Irk. The letter *l* denotes that the affluent after which it stands enters the main river on the left; those without any affix enter on the right side. Capitals of counties are distinguished by SMALL CAPITALS; towns of 4000 inhabitants and upwards, by Roman letters; and those between 750 and 4000, by *Italics.* B denotes bay; C., coast; Hr., harbour; and Sd., sound.

Basins inclined to the Irish Sea.

Rivers.	*Towns.*
Sark,	*Gretna Green*, on the boundary.
Esk,	*Longtown*, *Langholm* (Scotland).
Eden,	CARLISLE, APPLEBY, Kirkby-Stephen.
Caldew, *l*	Carlisle.
Irthing,	*Brampton.*
Eamont, *l.*	Penrith.
Wampool,	Wigton.
Poebeck,	Whitehaven.
Ellen,	Maryport.
Derwent,	Workington, Cockermouth, *Keswick.*
Ehen,	*Egremont.*
Esk,	*Ravenglass.*
Duddon,	*Broughton.*
Morecambe Bay,	Ulverston, *Dalton*, n., Cartmell, n.
Leven and L. Windermere,	Hawkshead, n., *Ambleside.*
Ken or Kent,	*Milnethorp*, Kendal.
Lune,	LANCASTER, Kirkby-Lonsdale.
Dent, *l*	*Dent.*
Wyre,	Fleetwood, Poulton, *Garstang.*
Ribble,	*Kirkham*, Preston, Clitheroe, *Settle.*
Douglas, *l*	Wigan, Leigh.
Chor,	Chorley.
Darwen, *l.*	Blackburn, n.
W. Calder, *l*	Burnley, Colne.
Alt,	Ormskirk, Prescot.
Mersey & Tame,	Liverpool, Birkenhead, Warrington, Runcorn, Stockport, Ashton-under-Lyne, Staley Bridge.
Weaver, *l.*	Frodsham, Northwich, Crewe, n., Nantwich.
Dane,	*Middlewich*, Congleton.
Sankey,	Warrington, *Newton*, n., St Helens.
Bollin, *l*	Altringham, Macclesfield.
Irwell,	Manchester, Salford, Bury, Haslingdon.
Medlock, *l*	Oldham.
Irk, *l.*	Middleton.
Crole,	Bolton.
Roche, *l*	Rochdale.
Goyt, *l*	Stockport, *Buxton*, n.
Dee,	Holywell, Flint, Hawarden, n., *Neston* CHESTER, Wrexham, n., Malpas, n., Llangollen, *Corwen*, *Bala.*
Allen, *l.*	MOLD.
Clwyd,	*Rhyddlan*, St Asaph, DENBIGH, *Ruthin.*
N. Co. Denbigh,	*Abergeley.*
Conway,	*Conway*, *Llanrwst.*
Menai Straits,	BEAUMARIS, Bangor, CAERNARVON.
Co. of Anglesea,	Amlwch, Holyhead.
Co. of Caernarvon,	*Nevin*, *Pwllheli.*
Maw,	*Barmouth*, DOLGELLY, n.

Basins inclined to the Irish Sea (continued).

Rivers.	*Towns.*
Gwynion, *l*	Dolgelly.
Disynwy,	*Towyn.*
Dovey,	*Machynlleth.*
Ystwith,	Aberystwith.
Teify,	CARDIGAN, *Newcastle-Emlyn, Lampeter, Tregaron.*
Co. Pembroke,	*Newport, Fishguard,* St David's, Tenby.
Milford Haven,	*Milford,* PEMBROKE, Haverfordwest, *Narberth.*

Basins inclined to the Bristol Channel.

Taff,	*Laugharne.*
Towey,	CAERMARTHEN, Llandeilo-Vawr, *Llangadock, Llandovery.*
Caermarthen Bay,	*Kidwelly,* Llanelly.
Tawy,	Swansea.
Neath,	Neath.
Afon,	*Aberavon.*
Ogmore,	*Bridgend.*
Ddaw,	*Cowbridge.*
Severn,	CARDIFF, Chepstow, n., *Berkeley,* n., Lydney, *Newnham,* GLOUCESTER, Tewkesbury, *Upton,* Malvern, *Stourport,* Bewdley, Bridgenorth, Broseley, Much-Wenlock, n., SHREWSBURY, Welshpool, MONTGOMERY, Llanidloes.
Axe, *l*	*Axbridge,* Wells.
Taff,	CARDIFF, Merthyr-Tydvil.
Ely,	*Llantrissent.*
Usk,	Newport, *Caerleon, Usk,* Abergavenny, *Crickhowel,* BRECON.
Ebwy,	Tredegar, n.
Afon Llwyd,	*Caerleon,* Pontypool.
Lower Avon, *l*	Bristol, Keynsham, BATH, Bradford, Trowbridge, *Melksham,* Chippenham, Malmesbury.
Lr. Frome,	Bristol, Chipping-Sodbury.
Frome, *l*	Frome, *Bruton,* n.
Were, *l*	Westbury.
Marden, *l*	Calne.
Wye,	Chepstow, *Coleford,* MONMOUTH, Ross, HEREFORD, *Hay, Builth,* Rhayader.
Lugg, *l*	Leominster, Presteign, NEW RADNOR, n.
Frome, *l*	Bromyard.
Arrow,	Leominster, Kington.
Somergill	NEW RADNOR,
Berkeley Avon, *l*	*Berkeley,* Wotton-under-Edge.
Frome, *l*	*Newnham,* n., Stroud.
Stroudwater,	Stroud, Minchin-Hampton.

Basins inclined to the Bristol Channel (continued).

Rivers.	*Towns.*
Leddon,	GLOUCESTER, Newent, *Ledbury.*
Chelt, *l*	Cheltenham.
Upper Avon,	Tewkesbury, *Pershore,* Evesham, *Stratford,* WARWICK, Rugby.
Arrow,	*Alcester.*
Alne, *l*	Henley-in-Arden.
Stour, *l*	*Stratford, Shipston.*
Leam, *l*	WARWICK, Leamington.
Itchin, *l*	*Southam.*
Sow,	Coventry, n.
Swift,	Rugby, *Lutterworth.*
Teme,	WORCESTER, n., *Tenbury,* Ludlow, *Knighton.*
Rea, *l*	*Cleobury-Mortimer.*
Clun, *l*	Clun.
Salwarp, *l*	Droitwich, Bromsgrove.
Stour, *l*	Stourport, Kidderminster, Stourbridge, *Halesowen,* Dudley, n.
Smestow, *l*	Wolverhampton, Bilston, n.
Warf, *l*	Bridgenorth, *Shiffnel.*
Tern,	Wellington, n., Market-Drayton.
Roden,	*Wem, Whitchurch,* n., *Ellesmere,* n.
Mees, *l*	*Newport.*
Perry, *l*	Oswestry.
Vyrnwy, *l*	*Llanfair.*
Cain, *l*	*Llanfyllin.*
Brue,	*Glastonbury, Shepton - Mallet, Castlecarey, Bruton.*
Parret,	Bridgewater, *Langport, S. Petherton, Crewkerne, Beaminster.*
Carey,	*Somerton.*
Tone, *l*	Taunton, *Milverton,* n., Wellington, *Wiveliscombe.*
Yore, or Ivel,	*Langport, Ilchester,* Yeovil, Sherborne.
Isle, *l*	*Ilminster, Chard.*
Bristol Channel,	*Dunster, Minehead, Ilfracombe, Hartland.*
Taw,	Barnstaple, *Chumleigh.*
Mole,	S. Molton.
Torridge,	Bideford, *Torrington.*
Bude,	*Stratton.*
Camel,	*Padstow,* BODMIN.
W. Co. Cornwall,	*St Columb,* n., Camborne, n., St Ives.

Basins inclined to the English Channel.

Mount's Bay,	Penzance, *Marazion.*
Looe,	Helstone.
Falmouth Hr.,	Falmouth, Penryn, Truro, Redruth, n.
S. Co. Cornwall,	*St Austell.*
Fowey,	*Fowey, Lostwithiel.*
Looe,	*East Looe,* Liskeard.

Basins inclined to the English Channel (continued).

Rivers.	*Towns.*
Plymouth Sd.,	Plymouth, Devonport, *St Germans, Saltash.*
Lynher,	*St Germans, Callington.*
Tavy,	Tavistock.
Tamar,	*Saltash,* Launceston, *Holsworthy,* n.
Erne,	*Modbury.*
Salcombe Hr.,	*Kingsbridge.*
Dart,	Dartmouth, Totness, *Ashburton.*
Torbay,	Brixham.
Teign,	Teignmouth, *Newton - Bushel, Chudleigh, Moreton-Hampstead.*
Ex,	Exmouth, *Topsham,* EXETER, Tiverton, *Bampton, Dulverton.*
Crede,	*Crediton.*
Culm, *l*	*Bradninch.*
Otter,	*St Mary Ottery, Honiton.*
Sid,	*Sidmouth.*
Axe,	*Colyton, Axminster.*
Lyme,	Lyme-Regis.
Bride or Brit,	Bridport, *Beaminster.*
Wey,	Weymouth.
Poole Harbour and Frome,	Poole, *Corfe Castle,* n., Wareham, DORCHESTER.
Piddle, *l*	*Bere-Regis, Piddleton.*
Cerne, *l*	*Cerne-Abbas.*
Hampshire Avon,	Christchurch, *Ringwood,* Fordingbridge, SALISBURY, *Amesbury,* Devizes.
Stour,	Christchurch, *Wimborne-Minster,* Blandford, *Sturminster.*
Allen, *l*	*Cranborne.*
Cayle, *l*	*Stalbridge, Wincanton.*
Wily,	SALISBURY, Wilton, *Heytesbury,* Warminster.
The Solent,	Lymington.
Southampton water,	Southampton.
Aire, *l*	Tichfield.
Hamble, *l*	*Bishop's Waltham.*
Itchin, *l*	Southampton, WINCHESTER, Alresford.
Test,	*Romsey, Stockbridge,* Andover, n., *Whitchurch.*
Portsmouth Hr.,	Gosport, Portsmouth, *Fareham.*
Chichester Hr. and R. Lavant,	*Havant,* CHICHESTER.
Sussex Co.,	*Bognor,* Worthing, Brighton, Hastings.
Arun,	*Little Hampton, Arundel.*
W. Rother,	*Petworth,* Midhurst, *Petersfield.*
Adur,	Shoreham, *Steyning,* n., Horsham.
Ouse,	*Newhaven,* Lewes, *Cuckfield,* n.
Rother,	Rye, *Battle,* n.
Crane, *l*	*Tenterden,* n., *Cranbrook.*
S. Co. Kent,	Hythe, Folkestone.
E. Co. Kent,	Dover, Deal.

Basins inclined to the North Sea.

Rivers.	*Towns.*
Stour,	Ramsgate, *Sandwich*, Canterbury, *Wye*, Ashford.
N. Co. Kent,	Margate, *Herne Bay*, *Whitstable*, Faversham.
Thames,	Sheerness, *Rayleigh*, n., Gravesend, Woolwich, Greenwich, Blackwall, Deptford, LONDON, Fulham, BRENTFORD, Richmond, Twickenham, Kingston, Hampton, *Chertsey*, *Staines*, *Eton*, Windsor, *Maidenhead*, High Wycombe, Great Marlow, Henley, READING, n., Wallingford, Abingdon, OXFORD, *Bampton*, n., *Great Farringdon*, *Lechlade*, Cricklade, Cirencester, n.
Medway,	Sheerness, Chatham, *Strood*, Rochester, MAIDSTONE, Tunbridge, Tunbridge Wells, n., East Grinstead, n.
Darent,	Dartford, *Seven Oaks*, *Westerham*.
Pym, or Bourne, *l*	*Romford*.
Roding, *l*	Barking, *Ilford*, *Epping*, n.
Lea, *l*	Blackwall, Tottenham, n., Enfield, n., *Waltham Abbey*, *Hoddesdon*, Ware, HERTFORD, *Hatfield*, Luton.
Stort, *l*	Bishop's Stortford.
Ravensbourne,	Deptford, Bromley.
Wandle,	Wandsworth, Croydon.
Brent,	*Brentford*.
Hogsmill,	Kingston, *Epsom*.
Mole,	*Leatherhead*, *Dorking*, Reigate.
Wey,	GUILDFORD, *Godalming*, *Farnham*, *Alton*.
Bourne,	*Chertsey*, *Chobham*.
Colne, *l*	*Staines*, *Uxbridge*, *Rickmansworth*, *Watford*, St Albans.
Misbourne,	Uxbridge, Amersham.
Chess,	Chesham.
Vorlan,	St Albans, *Hemel-Hempstead*, n., *Berkhamstead*, n.
Wick, *l*	Great Marlow, High Wycombe.
Loddon,	*Henley*, n., *Hurst*, Basingstoko, *Kingsclere*, n.
Kennet,	READING, Newbury, *Hungerford*, Marlborough.
Lambourne, *l*	Newbury, *Lambourne*.
Thame,	*Thame*, Aylesbury, *Tring*, n., *Ivinghoe*, n.
Ock,	Abingdon, *Wantage*, n., *Farringdon*, Highworth.
Cherwell, *l*	OXFORD, Banbury.
Ray, *l*	Bicester.
Evenlode, *l*	*Charlbury*, *Moreton*.
Glynn, *l*.	Woodstock.
Windrush, *l*	*Witney*, *Burford*.
Colne, *l*	*Lechlade*, *Fairford*.
Churn, *l*	Cirencester.

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Crouch,	*Billericay.*
Blackwater,	Maldon, *Witham, Coggeshall,* Saffron-Walden, n.
Chelmer,	CHELMSFORD, *Dunmow, Thaxted.*
Cann,	Chelmsford, *Brentwood,* n.
Podsbrook,	*Witham,* Braintree.
Colne,	Colchester, Halstead.
Stour,	Harwich, *Manningtree,* Sudbury, *Long Melford, Haverhill.*
Bret, *l*	*Hadleigh, Lavenham.*
Orwell,	IPSWICH, Stow-Market.
Deben,	Woodbridge, *Debenham.*
Alde,	*Orford, Framlingham.*
Blyth,	*Southwold, Halesworth.*
Suffolk Co.,	Lowestoft.
Yare,	Yarmouth, NORWICH, Windham, n.
Buro, *l*	Aylsham.
Ant, *l*	North Walsham.
Waveney,	Beccles, *Bungay, Harleston,* Eye, n., *Diss.*
Taes,	Norwich, *Attleborough,* n.
Wensum, *l*	*Fakenham.*
N. Co. Norfolk,	*Cromer,* Wells.
Cley,	*Holt.*
Great Ouse,	Lynn-Regis, *Downham-Market,* Ely, *St Ives, Huntingdon, St Neots,* BEDFORD, *Olney, Newport-Pagnel, Stony Stratford,* BUCKINGHAM, *Brackley.*
Nar, or Setchy,	Lynn-Regis, *Swaffham,* n.
Stoke,	*Downham-Market,* n., *Watton.*
Lit. Ouse,	Brandon, Thetford, *Kenninghall.*
Larke,	*Mildenhall,* Bury St Edmund's.
Cam,	*Newmarket,* n., CAMBRIDGE, Saffron-Walden.
Linton,	*Linton.*
Ivel,	*Potton,* n., Biggleswade, *Ampthill.*
Hiz,	Hitchin.
Ouzel,	*Woburn,* n., Leighton-Buzzard, *Dunstable,* n.
Tow,	*Towcester.*
Nene,	March, *Ramsey, Yaxley,* n., Wisbeach, Long Sutton, *Crowland,* Peterborough, Cliffe-Regis, n., *Oundle,* Wellingborough, NORTHAMPTON, Daventry, *Naseby,* n.
Ise,	Kettering, *Rothwell.*
Welland,	Holbeach, n., Spalding, *Crowland, Market-Deeping,* Stamford, *Uppingham,* n., *Market-Harborough.*
Glen,	*Bourne.*
Witham,	Boston, LINCOLN, Grantham.
Sleaford,	*Sleaford.*
Bain, *l*	Horncastle.
Langworth, *l*	*Wragby, Market-Rasen.*

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Steeping,	*Wainfleet, Spilsby.*
Withern,	*Alford,* n.
Humber and Trent,	Great Grimsby, *Patrington, Hedon,* Hull or Kingston, *Barton, North and South Cave; Epworth,* Gainsborough, Newark, *Southwell,* n., *Bingham,* n., NOTTINGHAM, *Castle Donnington,* Burton, *Alrewas, Rugeley, Stone,* Longton or Lane End, Newcastle-under-Lyne, Stoke-upon-Trent, Hanley, Shelton, Burslem.
Ludd,	Louth.
Hull, *l*	Kingston or Hull, Beverley, *Great Driffield, Kilham.*
Ancholm,	Glanford Brigg, *Caistor,* n., *Kirton-in-Lindsey,* n.
Ouse and Ure,	Goole, *Howden,* Selby, YORK, all on the Ouse; *Aldborough, Boroughbridge,* Ripon, *Masham,* Hawes.
Don,	*Thorne,* Doncaster, Rotherham, Sheffield, Pennistone.
Dearne, *l*	Barnsley.
Rother,	Rotherham, Dronfield, n., Chesterfield.
Aire,	*Howden,* n., Snaith, Pontefract, n., Leeds, Bradford, n., Bingley, Keighley, Skipton.
Calder,	*Castleford,* Wakefield, Dewsbury, Huddersfield, n., Halifax.
Derwent, *l*	*Pocklington,* n., New Malton, *Pickering,* n.
Rye,	*Helmsley, Kirkby-Moorside,* n.
Wharfe,	*Tadcaster, Wetherby,* Otley.
Foss, *l*	YORK, *Easingwold,* n.
Nidd,	Knaresborough, *Harrogate.*
Swale, *l.*	*Bedale,* n., Richmond, *Reeth, Muker.*
Codbeck, *l*	Thirsk.
Wiske, *l*	Northallerton.
Old Don, *l*	*Crowle, Tickhill.*
Idle, *l*	*Bawtry,* E. Retford, Mansfield.
Ryton, *l*	Worksop.
Devon,	Newark, *Bingham.*
Erewash, *l*	Alfreton, Kirkby-in-Ashfield.
Soar,	*Kegworth,* Loughboro', LEICESTER, Hinckley.
Wreak,	*Mount Sorrel,* Melton-Mowbray, OAKHAM.
Derwent, *l*	DERBY, Belper, Matlock, *Chatsworth.*
Wye,	*Bakewell, Tideswell, Buxton, Chapel-en-le-Frith.*
Dove, *l*	*Tutbury,* Uttoxeter, Ashbourne, *Hartington.*
Churnet,	*Cheadle,* Leek.
Schoo, *l*	Ashbourne, Wirksworth.
Mease,	*Alrewas,* Ashby-de-la-Zouch.
Tame,	Lichfield, n., Tamworth, Wednesbury, n., Walsall.

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Anker,	*Atherstone,* Nuneaton.
Blithe,	*Coleshill, Solihull.*
Rea,	Birmingham.
Blyth, *l.*	*Abbots Bromley.*
Sow,	STAFFORD, Eccleshall.
Penk,	*Penkridge, Cannock, Brewood.*
Yorkshire Co.,	Bridlington, Scarborough.
Esk,	Whitby, *Egton.*
Tees,	*Guisborough,* n., Stockton, *Yarm,* Barnard Castle.
Leaven,	*Stokesley.*
Skerne, *l*	Darlington.
Durham Co.,	Hartlepool.
Wear,	Sunderland, DURHAM, Bishop-Auckland, Walsingham.
Tyne,	Tynemouth, South Shields, North Shields, NEWCASTLE, Gateshead, Hexham, *Haltwhistle, Aldstone.*
North Tyne, *l*	Hexham, *Bellingham.*
Allen,	*Allendale.*
Blyth,	*Blyth.*
Wansbeck,	Morpeth.
Coquet,	*Rothbury.*
Aln,	Alnwick.
Co. of Northumberland,	*Belford,* n.
Tweed,	Berwick.
Till,	*Wooler.*

14. **Lakes.**—The English Lakes are few in number and very small in dimensions. Windermere, the largest of them, though 10 miles long, occupies only 5 square miles of surface. Derwentwater, or the lake of Keswick, is 4 miles long, and is the second largest; whilst Bala, the largest in Wales, is 8 miles in length. They are, however, celebrated for their beauty, for being the resort of tourists, and for containing a species of fresh-water fish called the char, peculiar to the north-west corner of England, and considered a high luxury of diet. Arranged in the order of the rivers that drain them, they are easily remembered.

The basin of the Derwent contains no fewer than six out of the seventeen enumerated — viz. : *Bassenthwaite, Derwentwater, Thirlemere, Crummockwater, Loweswater,* and *Buttermere,* all in Cumberland. The basin of the Eamont, a tributary of the Eden, contains *Ulleswater* and *Haweswater,* in Westmoreland. The Ehen drains *Ennerdale-water,* and the Irt, *Wastwater,* both in Cumberland. The Leven drains *Windermere, Grassmere,* and *Rydal,* all in Westmoreland; the Crake, *Coniston Water,* in Lancashire; the Dee, *Bala Lake,* in Merionethshire; and the Nene, *Ramseymere,* and *Whittleseamere,* in Huntingdonshire.

15. **Internal Communication.**—England stands unrivalled among the nations for the number and extent of its railways, canals, navigable rivers, and turnpike roads. In January 1859 there were 58 main lines of railway in operation, with a vast number of branches affording 6976 miles open for traffic. The whole kingdom, indeed, with the exception of central Wales and a small portion of the S.W. of England, is one huge network of railways. The Surrey iron railway, between Wandsworth on the Thames and Croydon in Surrey, was the first railway in England intended for public use, and was opened in 1805; but the Stockton and Darlington railway, opened in 1825, was the first to employ locomotive engines, and to excite the general interest of the public.

The following is a list of the principal RAILWAYS leading from the metropolis to the extremities of the kingdom, showing the length of the main lines, and the distance, per rail, from London to some of the most important provincial towns:—

London to York, by the *Great Northern*, 191 miles; continued to Newcastle and Berwick by the *North-Eastern*, 151. Total, 342 miles.

London to Birmingham, per the *London and North-Western*, 113 miles; with branches to Manchester 197, and Liverpool 210; extended from Liverpool to Carlisle 310, and thence by the *Caledonian Railway* to Edinburgh 410, and Glasgow 415 miles from London.

London to Holyhead, *viâ* Liverpool—first, per the *London and North-Western* to Liverpool 210, thence per *Chester and Birkenhead* to Chester 224, and per *Chester and Holyhead* to Holyhead, 310 miles from London.

London to Haverfordwest in Pembrokeshire—first, per the *Great Western* to Gloucester 114, and thence per the *Gloucester and Haverfordwest* to Haverfordwest, 276 miles from London.

London to Cornwall—first, per the *Great Western* to Bath 107, Bristol 118, and Exeter 194; and thence by other lines to Plymouth 247, Truro 297, and Penzance about 324 miles.

London to Dorchester—first, per the *South-Western Railway* to Southampton 79, with a branch to Portsmouth 94, and thence per the *Southampton and Dorchester* to Dorchester, 140 miles.

London to Brighton, per the *London, Brighton, and South Coast Railway* to Brighton, 50 miles.

London to Dover, per *South-Eastern Railway*, by Reigate 21, Tunbridge 41, Ashford 67, Folkstone 83, Dover 88 miles.

London to Yarmouth, per the *Eastern Counties Railway, viâ* Cambridge 57, Norwich 126, to Yarmouth 146½ miles.

The *Newcastle and Carlisle Railway* crosses the North of England from sea to sea, 59½ miles.

The estuaries of the Mersey and Humber are connected by two railways—first, the *Liverpool and Manchester*, 31 miles, connecting these two cities; and then the *Manchester, Sheffield, and Lincolnshire Railway* to Hull, 107 miles.

CANALS.—England is also intersected in every direction by canals, navigable rivers, and rivers rendered navigable by artificial means. The last-mentioned are called *navigations*. The oldest canal is the *Sankey Brook Canal* in Lancashire, finished in 1768; and the total length of all the canals is estimated at about 3000 miles, besides 2000 miles of rivers rendered navigable by artificial means. The following list gives a few of the principal:—

The *Leeds and Liverpool Canal* connects the Irish Sea with the German Ocean; length 127 miles. It is connected with the *Lancaster Canal* from Wigan to Kirkby-Kendal, 76 miles; and with the *Bridgewater Canal* from Manchester to Runcorn on the Mersey, 27 miles.

The Mersey and the Severn are united by the *Montgomery Canal*, 27 miles, and the *Ellesmere and Chester Canal*, 61: total length from Montgomery to near Liverpool, 88 miles.

The Mersey and the Trent are joined by the *Grand Trunk Canal*, which commences at Preston Brook in Cheshire, and proceeds through Stafford and Derby to the confluence of the Derwent and Trent, 93 miles.

The *Thames and Severn Canal* commences at Lechlade on the Thames, and proceeds to Stroud in Gloucestershire, 30 miles, and thence to the Severn, 8 miles, by the *Stroudwater Canal*, thus connecting the Thames and the Severn; they are also connected in another place by the *Kennet and Avon Canal*, from Newbury on the Kennet, in the basin of the Thames, to near Bath on the Avon, in the basin of the Severn, 57 miles.

The *Staffordshire and Worcester Canal* commences in the Severn at Stourport, and unites with the *Grand Trunk Canal* near Haywood, in Staffordshire, 46½ miles.

The *Basingstoke Canal* commences at Basingstoke, in Hampshire, and terminates at Weybridge on the Wey, and is there continued by the *Wey and Arun Junction* to the river Arun, thus connecting the Thames with the English channel, 55 miles.

The *Bridgewater and Taunton Canal* connects the Parret with the Ex, or the Bristol and English Channels, 42½ miles.

England is also traversed by 25,000 miles of *Turnpike Roads*, and by about 100,000 miles of cross-roads, by means of which, and by the numerous canals and railways, commodities of all kinds are so easily and expeditiously conveyed to all parts of the kingdom that they everywhere fetch about the same prices.

16. **National Character.**—The most striking characteristics of an Englishman are his love of liberty, justice, and independence, and his high sense of honour and fair-dealing. To think, speak, write, and act as he pleases on all subjects—so long as he keeps within the bounds of truth and charity—he claims as his inalienable right; and to maintain this liberty he evinces indomitable courage, perseverance, and self-denial. To a stranger he appears cold, reserved, blunt, and haughty; but his candour, probity, and veracity secure him the respect of all. His humanity and philanthropy are of a highly practical character, as is evinced by the extraordinary number of charitable, benevolent, and religious institutions with which his country abounds. He is unrivalled for good taste in domestic architecture, and his home is always a model of cleanliness, neatness, and comfort. Fond of high living, he is often taunted by foreigners as showing too great a predilection for "roast-beef, plum-pudding, and beer;" yet he is in reality temperate in eating and drinking, and has a strong aversion to drunkenness; while his frugality, economy, and providence are evinced by his vigorous support of savings-banks, friendly societies, and insurance offices. When living in the country he can with difficulty restrain himself from hunting, horse-racing, and other field-sports; and wherever he finds himself, he warmly encourages betting, gambling, chess-playing, and the theatre.

17. **Literature.**—There is perhaps no nation, ancient or modern, that excels England in the number of distinguished literary names. The following is a list of some of her most eminent and gifted sons in the various departments of science and literature:—

POETRY: Chaucer, Spenser, Shakespeare, Milton, Herbert, S. Butler, Waller, Prior, Dryden, Pope, Young, Cowper, Crabbe, Byron, Rogers, Coleridge, Southey, Wordsworth, Tennyson.

HISTORY: Clarendon, Gibbon, Coxe, Roscoe, Napier, Lingard, Thirlwall, Hallam, Grote, Macaulay.

SCIENCE AND PHILOSOPHY: Bacon, Boyle, Newton, Ray, Locke, Hobbes, Cudworth, Tucker, Malthus, Bentham, Davy, Whewell, Sedgwick, Professor Owen.

THEOLOGY: Bede, Hooker, Jeremy Taylor, Chillingworth, Bishop Hall, Barrow, Walton, Patrick, Bishop Lowth, Owen, Howe, Baxter, Bunyan, Poole, Doddridge, Henry, Lardner, Butler, Samuel Clarke, Paley, Scott, R. Hall, Foster, Whately, Isaac Taylor.

MEDICINE: Harvey, Jenner, Heberden, Parry, Gooch, Hall, Willan, Bateman, Cooper.

TRAVELS: Drake, Frobisher, Dampier, Anson, Byron, Cook, Denham, R. and J. Lander, Franklin.

FINE ARTS: Wren, Hogarth, Reynolds, Chantrey, Hayman, Gainsborough, Wilson, Opie, Romney, Wright, Northcote, Morland, Lawrence, Haydon, Turner, Landseer, Purcell.

MISCELLANEOUS: Addison, Johnson, Bentley, Sydney Smith, De Foe, Fielding, Warren, Thackeray, Dickens.

SCOTLAND.

1. **Position and Boundaries.**—Scotland forms the north part of Great Britain; the mainland extends from lat. 54° 38′ to 58° 41′ north, and from lon. 1° 45′ to 6° 14′ west; thus occupying 4° 3′ of lat. and 4° 29′ of lon. It is bounded on the north by the Pentland Firth, on the east by the North Sea, on the south by England, and on the west by the Atlantic.

2. **Form and Extreme Points.**—Of an oblong but extremely irregular form, with numerous deep indentations. The extreme points are, the Mull of Galloway in the south; Dunnet Head in the north; Buchanness in the east; and the Point of Ardnamurchan in the west. Including the islands, the most northerly point is Unst, in lat. 60° 50′; and the most westerly, St Kilda, in lon. 8° 35′ west.

3. **Coast Line.**—So extremely irregular as to suggest the idea that the kingdom is about to fall into several fragments: length, including only the main inlets of the ocean, 2500 miles, or 1 mile of seaboard for every 11 square miles of surface. This ratio is perhaps unparalleled in any other country except Greece and Denmark.

4. **Area and Dimensions.**—Including the islands the area is 31,324 square miles, or 20,047,360 acres, being considerably more than one-third of the area of Great Britain with the circumjacent isles. Extreme length of mainland 276 miles, with a breadth varying from 30 to 175 miles; but from the Mull of Galloway to the extreme north of Shetland about 450 miles, and from Peterhead to St Kilda about 250 miles.

5. **Population.**—In 1851 the population was 2,888,742, being 100 persons for every square mile of surface.[*] In 1801 the population was only 1,599,068: it has therefore nearly doubled itself in the half-century. The population is about equally divided between town and country, there being 225 cities and towns with an average population of 6654. The counties containing the largest population are, Lanark, with 530,000, Mid-Lothian 260,000, Aberdeen 212,000; while Kinross has only 8924, and Nairn 9956. The most densely peopled counties are, Renfrew, which has 687 persons to every square mile, Mid-Lothian 653, and Lanark 537; whereas Sutherland has only 14 persons to the square mile, Inverness 23, and Ross 26.

6. **Political Divisions.**—Scotland is politically divided into 33 counties, 13 of which are southern, 10 central, and 10 northern. The central counties are separated from the southern by the Firths of Forth and Clyde and the Grand Canal connecting them; and from the northern by the Grampian chain.

THIRTEEN SOUTHERN COUNTIES.

1. **Edinburgh or Mid-Lothian.**—EDINBURGH 160 n, Musselburgh 7, Portobello 3.5, Leith 31 (Firth of Forth), Dalkeith 5 (Esk).

TOWNS BETWEEN 500 AND 2500 INHABITANTS:[†]—Newhaven, Loanhead, Penicuik, Currie, Mid-Calder, Ratho, Lasswade, Cramond.

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[*] The estimated population at 1st January 1857 was 3,033,177. During the year 1857 there were registered in Scotland 103,628 births, 61,925 deaths, and 21,314 marriages. Allowing for increase of population, this gives the proportion of 1 birth in every 29, 1 death in every 49, and 1 marriage in every 143 persons living in Scotland during the year. During the three years ending January 1, 1858, the mean mortality in Scotland was 1 in 50 of the population, or 200 for every 10,000 inhabitants; whereas in England it was, during the same years, 216 for every 10,000. During the year 1857 there emigrated from the United Kingdom 212,875 persons, of whom 16,253 were of Scottish origin.

[†] The figure after the decimal point denotes so many *hundreds;* thus Portobello 3.5 signifies that the population is 3,500. For other abbreviations see under "England," p. 121, note.

2. **Haddington** or **East Lothian.**—HADDINGTON 3.9 (Tyne), Dunbar 3 (Firth of Forth).

North Berwick, Tranent, Prestonpans, Aberlady, Cockenzie, Dirleton, Gifford.

3. **Berwick.**—GREENLAW, p. 0.8 (Blackadder), Dunse 2.6 (Whiteadder).

Chirnside, Coldstream, Earlston, Lauder, Eyemouth, Ayton, Cockburnspath.

4. **Roxburgh** or **Teviotdale.**—JEDBURGH 3.6 (Jed), Hawick 6.7 (Teviot), Kelso 4.8 (Tweed).

Oxnam, Eckford, Ancrum, Denholm, Melrose, Yetholm, New Castleton.

5. **Dumfries.**—DUMFRIES 13.2 (Nith), Annan 3.4 (Annan).

Thornhill, Sanquhar, Minniehive, Penpont, Ecclesfechan, Lockerby, Lochmaben, Moffat, Langholm, Gretna Green.

6. **Kirkcudbright.**—KIRKCUDBRIGHT 2.7 (Dee), Maxwelltown 3.8 (Nith).

Castle-Douglas, New Galloway, Dalry, Creetown, Gatehouse.

7. **Wigtown.**—WIGTOWN 2.1 (Wigtown Bay), Newton-Stewart 2.6 (Cree), Stranraer 5.7 (Loch Ryan).

Whithorn, Glenluce, Port-Patrick.

8. **Ayr.**—AYR 17.6 (Ayr), Saltcoats 4.3, Largs 2.8 (Firth of Clyde), Irvine 7.5, Kilmarnock 21.4 (Irvine), Kilwinning 3.7, Dalry 4.4, Kilburn 3.4 (Garnock), Stewarton 3.2 (Annock), Girvan 7.3, Maybole 3.9 (Girvan), Beith 4 (Black Cart).

Muirkirk, Ardrossan, West Kilbride, Fairly, Galston, New Mills, Mauchline, Troon, Prestwick, Kirkoswald, Coylston, Ochiltree, Old Cumnock, Dalmellington, Ballantrae.

9. **Renfrew.**—RENFREW 3, Port-Glasgow 7, Greenock 37 (Firth of Clyde), Paisley 48, Pollockshaws 6.1 (White Cart), Johnstone 5.9, Kilbarchan 2.5 (Black Cart), Barrhead 6.1 (Levern).

Ellerslie, Gourock, Lochwinnoch, Neilston, Langside.

10. **Lanark.**—LANARK 5, Govan 2.5, Partick 2.7, Glasgow 330, Rutherglen 6.5, Hamilton 9.6, Carluke 4 n. (Clyde), Airdrie 14.4 (North Calder), Wishaw 3.4 (South Calder), Strathaven 4.3 (Avon).

Cambuslang, Chapelhall, Uddingston, Blantyre, Shotts, Stonehouse, Lesmahago, Wilsontown, Douglas, Carnwath, Leadhills, Kilbride, Biggar, Bothwell Bridge.

11. **Linlithgow** or **West Lothian.**—LINLITHGOW 4.2, Bathgate, 3.3 (Avon), Borrowstounness or Bo'ness 2.7 (Firth of Forth).

South Queensferry, Whitburn.

12. **Peebles.**—PEEBLES 2 (Tweed).

Innerleithen or Inverleithen, Eddleston, Linton.

13. **Selkirk.**—SELKIRK 3.3 (Ettrick), Galashiels 2.6 (Gala Water).

TEN CENTRAL COUNTIES.

14. **Fife.**—CUPAR 5.7, St Andrews 5.1, Auchtermuchty 2.7 (Eden), Largo 2.8 p., Dysart 8, Kirkcaldy 10.5, Burntisland, 2.7 (Firth of Forth), Dunfermline 13.8 (Lyne), Newburgh 2.6 (Tay).

Falkland, Strathmiglo, Ceres, Crail, Kilrenny, Anstruther, Pittenweem, Elie, Leven, Buckhaven, Wemyss, Kinghorn, Aberdour, Inverkeithing, Leslie, Ferry-Port-on-Craig.

15. **Kinross.**—KINROSS 2.6 (Leven).

Milnathort.

16. **Clackmannan.**—CLACKMANNAN 1.5 (Black Devon), Alloa 6.7 Tillicoultry 3.2 (Devon).

Dollar.

17. **Stirling.**—STIRLING 12.8 (Forth), Falkirk 8.8 n., Denny 3.4 (Carron), Bannockburn 2.6 (Bannock), Kilsyth 4 (Kelvin), Alva 2.5 (Devon).

Kippin, Grangemouth, Airth, Carron, Camelon, Balfron, Fintry.

18. **Dumbarton.**—DUMBARTON 5.4, Helensburgh 2.8 (Clyde), Alexandria 3.8 (Leven), Kirkintilloch 6.4 (Kelvin).

Renton, Bonhill, Cumbernauld.

19. **Bute.**—ROTHESAY 7.1 (east coast of Bute).

Lamlash, Brodick (in Arran), Millport (in Cumbrae).

20. **Argyll.**—INVERARY 1.2 (Loch Fyne), Campbelton 6.9 (Kilbrannan Sound), Bowmore 3.5 (south coast of Islay).

Tarbert, Lochgilphead, Strontian, Tobermory, Oban, Dunoon.

21. **Perth.**—PERTH 24 (Tay), Crieff 3.8 (Earn), Auchterarder 2.5 (Ruthven), Blairgowrie 2.9 (Ericht), Kincardine, 2.7 (Firth of Forth).

Scone, Dunkeld, Logierait, Aberfeldy, Killin, Errol, Abernethy, Bridge of Earn, Muthill, Comrie, Dunning, Methven, Alyth, Blair-Atholl, Culross, Bridge of Allan, Dunblane, Doune, Callander.

22. **Forfar.**—FORFAR 9.3 (Dean), Kirriemuir 3.5 (Gairie), Broughty Ferry 2.8, Lochee 3.7 n., Dundee 79 (Firth of Tay), Arbroath 17 (Brothock), Montrose 15.2, Brechin 6.6 (South Esk).

Cupar-Angus, Glammis.

23. **Kincardine.**—STONEHAVEN 3.3 (Cowie).

Luthermuir, Laurencekirk, Auchinblae, Bervie, Johnshaven, Banchory-Ternan.

TEN NORTHERN COUNTIES.

24. **Aberdeen.**—ABERDEEN 72 (Dee), Old Aberdeen 2.5, Woodside 4.2, Inverury 2.3 (Don), Peterhead 7.3 (Ugie), Fraserburgh 3.1 (north coast), Huntly 3.1 (Deveron).

Kincardine O'Neil, Aboyne, Ballater, Castleton of Braemar, Kintore, Old Meldrum, Ellon, Strichen, New Pitsligo, Rosehearty, Turriff, Cumineston.

25. **Banff.**—BANFF 6 p. b., Macduff 2.5 (Deveron), Portsoy 2, Cullen 3.2, Buckie 2.8 (north coast), Keith 2.1 (Isla).

Aberchirder, Dufftown, Tomantoul.

26. **Moray** or **Elgin.**—ELGIN 5.4 (Lossie), Forres 3.3 n. (Findhorn).

Lossiemouth, Garmouth, Fochabers, Rothes, Burghead, Findhorn, Gordonstown.

27. **Nairn.**—NAIRN 3.4 (Nairn), Ferintosh (Cromarty Firth).

28. **Inverness.**—INVERNESS 12.8 (Ness).

Fort George, Fort Augustus, Fort William, Beauly, Grantown, Kingussie, Portree (Isle of Skye), Tarbet (Harris).

29. **Ross.**—DINGWALL 2 (Cromarty Firth), Tain 2.6 (Dornoch Firth).

Fortrose, Invergordon, Portmaholmack, Poolewe, Stornoway (in Lewis).

30. **Cromarty.**—CROMARTY 2 (Cromarty Firth).

Ullapool (Lochbroom).

31. **Sutherland.**—DORNOCH 0.6 (Dornoch Firth).

Golspie, Brora, Helmsdale, Tongue.

32. **Caithness.**—WICK and PULTENEYTOWN 6.7 (east coast), Thurso 2.9 (Pentland Firth).

Lybster, Castleton.

33. **Orkney and Shetland.**—KIRKWALL 3.5 (Orkney), LERWICK 2.9 (Shetland).

Stromness (Pomona), Scalloway (Mainland of Shetland).

7.—Descriptive Notes—COUNTIES AND TOWNS.

1. **Mid-Lothian,** in the basin of the Forth, and on the south side of the firth or estuary of that name.—G. C.: Nearly all Coal-measures, but trap in the Pentland Hills, and Lower Silurian in the S.E. Area, 358 square miles; population, 259,000. Surface hilly, having the Moorfoot Hills in the S.E., the Pentland Hills in the centre, and the Corstorphine Hills, including Arthur's Seat, near Edinburgh, in the N. Soil very fertile, and highly cultivated in the level parts; extensive nurseries and vegetable gardens near the capital. Minerals highly valuable, especially coal and ironstone, which are extensively wrought, and sandstone (at Craigleith) of a very superior quality. There is one vast bed of coal, between Carlops and Musselburgh, 15 miles long by 8 broad, and containing 33 seams. Manufactures less important, but extensive paper-mills on the Esk and Water of Leith, as also several breweries, distilleries, and potteries.

TOWNS. *Edinburgh,* near the Firth of Forth, the county town and the capital of Scotland, is one of the best and most chastely built cities in Europe. It is often called the Modern Athens, from the taste and elegance of its architecture. In literary fame it greatly surpasses every city in the United Kingdom, with the exception of London. Printing and publishing is carried on extensively, and there are several quarterly reviews of the first class, 12 newspapers, and many other periodical works. But Edinburgh is chiefly celebrated for its University, founded 1581, erected in 1789, with 33 professors, from 1600 to 1700 students, and a library containing 100,000 printed books and 310 MSS. This University holds a high rank as a medical school, while in mental and moral science it stands unrivalled in Britain. Among its most illustrious professors may be named Dugald Stewart, Thomas Brown, and Sir William Hamilton. Besides the University of Edinburgh, there is another distinguished theological seminary called the New College, where the ministers of the Free Church of Scotland receive their theological training. Among the most remarkable public buildings may be mentioned the Castle, situated on a precipitous rock, and once a place of great strength: it contains the regalia of Scotland, a garrison, and barracks for 2000 men; the Palace of Holyrood, founded by David I. in 1128, which forms the residence of the Sovereign when visiting the Scottish capital; St Giles's Cathedral, where the Solemn League and Covenant was subscribed in 1643; Victoria Hall, where the General Assembly of the Established Church of Scotland holds its annual meetings; Parliament House, where the Scottish Parliament met before the Union; the Advocates' Library, containing the largest and most valuable collection of books in Scotland, there being 110,000 printed volumes and 1700 MSS.; the Signet Library, containing 50,000 volumes; the Royal Institution; the National Gallery; and Sir Walter Scott's Monument.

Leith, at the mouth of the Water of Leith, and two miles N.E. of Edinburgh, of which it is the seaport, has a commodious harbour, and considerable colonial and foreign trade, with various manufactures.

2. **Haddington** lies E. of Mid-Lothian, and in the basins of the Forth and Tyne.—G.C.: Carboniferous in the W., Devonian in centre and E., Silurian in the S., and trap in the N. Surface hilly in the S., where are the Lammermoor Hills, level in the centre and N.; soil mostly a clayey loam, and highly fertile. Coal is worked in the carboniferous district, and limestone abounds in many places. The chief manufactures are salt and pottery wares at Prestonpans and Tranent; several extensive distilleries; and fisheries at Dunbar.

TOWNS. *Haddington*, the county town, is a small town on the Tyne, but with the largest market in Scotland for agricultural produce; the birthplace of John Knox and Alexander II. *North Berwick:* near it is Tantallon Castle, an ancient stronghold of the Douglases; and the Bass Rock, at one time the state prison for the kingdom, where many of the Scottish reformers were incarcerated. *Prestonpans:* here Charles Stewart, the Pretender, defeated the royal forces under Cope, in 1745.

3. **Berwick**, S.E. of Haddington, in the basin of the Tweed.—G.C: Silurian in the N., Devonian in W., and carboniferous limestone in S.E. Surface hilly and barren in the N., where are the Lammermoors; but the districts of Lauderdale in the W., and Merse in the S., are highly fertile and well cultivated. Agriculture in a highly advanced state; wheat and turnips are the principal crops. Minerals and manufactures unimportant; but many interesting remains of antiquity, such as castles, towers, abbeys, and priories.

TOWNS. *Greenlaw*, on the Blackadder, is the smallest county town in Scotland, with the exception of Dornoch. *Dunse*, the birthplace of Duns Scotus, Thomas Boston, and M'Crie the historian.

4. **Roxburgh,** S. of Berwick, and nearly all in the basin of the Tweed.—G.C.: Carboniferous in S., Devonian in centre and N., Silurian in W., and an extensive tract of trap-rock in the E. Surface hilly in the vicinity of the Cheviots, but elsewhere a level and fertile plain. Agriculture improving, but the county is chiefly pastoral; minerals, coal, lime, marl, and freestone; the manufactures are chiefly woollen.

TOWNS. *Jedburgh,* on the Jed, an affluent of the Teviot, and near the Cheviot Hills, is famous in border warfare, in which it repeatedly suffered by fire. *Hawick,* on the Teviot, is a manufacturing town, nearly twice the size of Jedburgh. *Kelso,* on the Tweed, at its junction with the Teviot, a beautiful little town, with the remains of an abbey built by David I.; has a large cattle-market, held on the 5th of August. *Melrose Abbey,* on the Tweed, is the most magnificent ruin of the kind in Scotland. Other famous abbeys in this county and on the same river are, *Dryburgh Abbey,* and *Jedburgh Abbey,* also *Abbotsford,* the beautiful residence of the late Sir Walter Scott.

5. **Dumfries,** S.W. of Roxburgh, in the basins of the Nith, Annan, and Esk.—G.C.: Chiefly Lower Silurian; but New Red in the S., and carboniferous limestone in the S.E. The county is divided into three districts—Nithsdale, Annandale, and Eskdale. Surface generally hilly, especially in the N. and N.E., where is the Lowther range; soil fertile in the lowlands, and affording good pasturage on the high grounds. Minerals are limestone, coal, and lead; manufactures unimportant.

TOWNS. *Dumfries,* on the Nith, with its suburb *Maxwelltown,* is a thriving town, and the provincial capital of the south of Scotland. Here are interred the remains of Robert Burns, the Scottish poet, and of John Comyn, who was stabbed by Robert Bruce in 1305. *Annan,* on river of same name, with a good natural harbour; shipbuilding, cotton factories, and rope-works; considerable export trade. *Moffat,* a neat village, much frequented by invalids, who resort here to the chalybeate and sulphurous springs.

6. **Kirkcudbright,** or East Galloway, W. of Dumfries, chiefly in the basins of the Dee and Nith.—G.C.: Nearly all Lower Silurian. Surface hilly; climate mild and moist; soil productive in the south, but the main part only affords pasture for sheep, which are reared in great numbers. The county is noted for its superior honey; but there are no important minerals or manufactures.

TOWNS. *Kirkcudbright,* on the Dee, near its mouth in the Solway, has the best harbour in the south of Scotland, but little trade. For *Maxwelltown,* see under Dumfries.

7. **Wigtown,** or West Galloway, W. of Kirkcudbright, a peninsular county in the extreme S.W. of Scotland.—G.C.: Lower Silurian.. Surface undulating, with many small lakes; soil fertile, well
or in excellent pasture; climate moist and mild; breeds of
very superior; abounds in druidical antiquities.

TOWNS. *Wigtown,* on a bay of same name, and near the mouth of
Bladenoch, a small town, with steam communication to Liverpool. *N*
ton-Stewart; hand-loom weaving, and trade in wool with

Stranraer; hand-loom weaving, tanneries, nail-factories, and steam communication with Glasgow, Belfast, and Whitehaven. *Port-Patrick,* a small town, with a line of submarine telegraph to Donaghadee, constructed in 1853.

8. **Ayr,** N. of Wigtown, in the lower basin of the Clyde.—G.C.: Carboniferous in the N. and W., Devonian in the centre, and Lower Silurian with trap in the S. Surface mountainous, but fertile tracts of land along the coast; agriculture in an improved state, and the soil extensively drained; iron and coal mines numerous and important; manufactures of woollen and cotton stuffs, and the county is celebrated for its embroidered work. Ayrshire consists of three districts, *Carrick* in the S., *Kyle* in the centre, and *Cunningham* in the N.

TOWNS. *Ayr,* a fine seaport town, on a river of same name, with large exports of coal, an extensive general trade, and several factories; the scene of the early achievements of Sir William Wallace: the poet Burns was born in the vicinity. *Saltcoats* (so called from its manufactures of salt); large shipbuilding docks; weaving and embroidery. *Largs,* memorable for the victory obtained by Alexander II. over Haco, king of Norway, in 1263. *Irvine,* with large export trade in coal; weaving of book-muslin and jaconets. *Kilmarnock,* by far the largest town in the county; numerous manufactures. *Girvan,* chiefly engaged in the cotton manufacture; a copper mine wrought in the vicinity.

9. **Renfrew,** N. of Ayr, in the basin of Clyde.—G.C.: Coal-measures in the E., and all the rest trap. Surface level, except in the W.; coal, limestone, and freestone abound; the manufactures are shawls, and silk and cotton stuffs; two-fifths arable.

TOWNS. *Renfrew,* on the Firth of Clyde, is the nominal capital. *Port-Glasgow,* a thriving town, with a good harbour and docks, was long the port of Glasgow, and continues to be the chief port in the Clyde for importing American timber. *Greenock,* a large thriving town on the Clyde, and the greatest seaport in the west of Scotland; famous for ship and steamboat building; and the birthplace of James Watt, who invented the steam-engine. *Paisley,* a great manufacturing town, and real capital of the county, on the White Cart, three miles above its junction with the Clyde; long famous for shawls, muslins, and cotton thread; coal and iron mines in the vicinity, which afford material for its numerous iron-works. It was the birthplace of Professor Wilson, of Alexander Wilson the American ornithologist, and of Robert Tannahill the Scottish poet.

10. **Lanark,** E. of Renfrew, in the basin of Clyde.—G.C.: Carboniferous in the N., Devonian in the centre, and Lower Silurian in the S. Area, 945 square miles; population, 530,000. Surface very variable, and only one-third arable; the coal, iron, and lead mines are very extensive and valuable; and it is the greatest manufacturing county in Scotland.

TOWNS. *Lanark,* on the Clyde, the nominal capital, has a large statue of Sir William Wallace, and near it are several falls of the Clyde. *Glasgow,* the largest city in Scotland, and the third largest in Britain (being exceeded only by London and Liverpool), is the great seat of the Scottish manufactures and commerce. Cotton is the principal staple, but there are numerous iron-furnaces and large coal and iron works. It is especially famous for shipbuilding and the construction of machinery. The University, founded in 1450, has 22 professors, 950 students, a library of 59,000 volumes, and a museum founded by Dr W. Hunter, containing a valuable collection of natural curiosities. There are many other magnificent public edifices, amongst which are St Mungo's Cathedral, the only perfect specimen of the ancient Gothic in Scotland, and the new Royal Exchange. Ships of 1000 tons burden can ascend to Glasgow. The harbour revenue in 1850 was £64,000. *Rutherglen* and *Hamilton*, considerable manufacturing towns on the Clyde. *Airdrie* and *Wishaw* have extensive coal and iron mines in their vicinity, and the former is a pretty large town, with considerable trade.

11. **Linlithgow**, or West Lothian, N.E. of Lanark, in the basin of the Forth.—G.C.: Almost wholly carboniferous. Surface beautifully varied and undulating; soil generally fertile, but swampy in the south, and three-fourths arable; coal extensively wrought; manufactures unimportant.

TOWNS. *Linlithgow*, on the Avon, with the remains of a royal palace, where Mary Queen of Scots was born in 1542. *Bathgate*, with a well-endowed academy. Here is wrought the celebrated Torbanehill mineral. *Bo'ness*, with a coal mine extending under the bed of the Forth.

12. **Peebles**, E. of Lanark, in the basin of the Tweed.—G.C.: Almost entirely Lower Silurian, but a little coal and Devonian in the N.W. Surface well wooded, but full of hills and bogs; one-third arable, and two-fifths in pasture; large numbers of sheep and cattle reared. Coal is raised in the N.W., and there are a few woollen manufactures.

TOWNS. *Peebles*, a small town at the confluence of the Tweed and the Eddleston, with various woollen manufactures. *Innerleithen*, with a mineral spring, the "St Ronan's Well" of Sir Walter Scott.

13. **Selkirk**, between Peebles and Roxburgh, in the basin of the Tweed, was formerly called Ettrick Forest,—G.C.: Wholly Lower Silurian. Surface mostly mountainous, but one-half arable; chiefly a pastoral county, producing excellent breeds of sheep and cattle.

TOWNS. *Selkirk*, on the Ettrick, near which is the birthplace of Mungo Park, the African traveller; long famous for the manufacture of shoes, and hence the corporation was called "the Sutors of Selkirk." *Galashiels*, on the Gala Water, with manufactures of woollen stuffs. *Ettrick*, 17 miles south-west of Selkirk, is the birthplace of James Hogg, the Ettrick Shepherd.

14. **Fife**, a peninsular county between the Firths of Forth and Tay, and opposite the Lothians.—G.C.: Chiefly carboniferous, largely interspersed with trap. Surface diversified; two-thirds under cultivation. "The How of Fife," traversed by the Eden, is very productive. Minerals—coal and lime; manufactures—linen; and exports—coal, lime, and fish.

TOWNS. *Cupar*, on the Eden, and in the centre of the "How of Fife," with spinning-mills and linen manufactures. *St Andrews*, a town of great antiquity, with a celebrated University, the oldest in Scotland: it was founded in 1411; consists of two colleges, named St Mary's and St Salvador, with 13 professors, and 34 bursaries of £1000 annual value. St Andrews was long the ecclesiastical capital of Scotland, and was the scene of many of the most remarkable political and religious events in Scottish history. *Largo*, the birthplace of Alexander Selkirk, the "Robinson Crusoe" of De Foe. *Dysart* has considerable trade in coal and building-stone, and some linen manufactures. *Kirkcaldy*, consisting of one long irregular street, has considerable trade; birthplace of Adam Smith, author of "The Wealth of Nations." *Dunfermline*, a place of great historical interest, and noted in modern times for its linen manufactures: here was born Charles I., and here Charles II. subscribed the Solemn League and Covenant in 1650.

15. **Kinross**, W. of Fife, in the basin of the Forth, is the second smallest county in Scotland.—G.C.: Coal-measures in the S. and E., and trap in the N. and W. Surface varied and well-cultivated; minerals and manufactures unimportant.

TOWN. *Kinross*, on Loch Leven, a small town with manufactures of cotton, tartan shawls, and damasks.

16. **Clackmannan**, W. of Kinross, in the basin of the Forth, is the smallest county in Scotland.—G.C.: Principally carboniferous, but trap rocks in the N. The river Devon, whose banks are highly fertile, traverses the county on its way to the Forth. Principal minerals are coal, ironstone, and sandstone, which are exported from Alloa.

TOWNS. *Clackmannan*, on the Devon, at its confluence with the Forth, a small town possessing little interest. *Alloa* is the principal town, near the head of the Firth of Forth; with considerable export trade and shipbuilding, and long famous for its excellent ale.

17. **Stirling**, W. of Clackmannan, in the basins of the Forth and Clyde.—G.C.: Carboniferous and trap in E. and S., Devonian in the centre, and metamorphic rocks in the W. Surface mountainous, especially in the W., where Ben Lomond attains a height of 3190 feet. The Carse lands, along the Forth, are level and fertile, and two-thirds of the whole county arable. Minerals—coal, ironstone, and freestone; here are the celebrated Carron Ironworks; manufactures—carpets, tartans, shalloons, blankets, paper, and chemical products; many cotton-mills, foundries, dye-works, and distilleries.

TOWNS. *Stirling*, on an abrupt hill, on the right bank of the Forth, is an important town, with a very ancient castle, which is one of the four military depôts still upheld in Scotland by virtue of the Articles of Union. *Falkirk* is the seat of three great annual cattle-fairs, called *Trysts*, at which usually 800,000 cattle and sheep exchange hands. Two memorable battles were fought here; one between Wallace and Edward I. in 1298, and the other between Prince Charles Edward and the royal army in 1746. *Bannockburn*, famous for a victory gained by the Scots, under Bruce, over the English in 1314. *Kilsyth*—cotton-weaving, coal and iron mines; here Montrose gained a victory over the Covenanters.

18. **Dumbarton**, W. of Stirling, in the basin of Clyde.—G.C. same as the last. Surface mostly mountainous, and soil poor, but fertile

and well-cultivated in the Lowlands; iron and coal-mines, and quarries of limestone and freestone; cotton-mills, glass-works, paper-mills, and printfields.

TOWNS. *Dumbarton,* on the Leven, near its confluence with the Clyde, with an ancient castle, one of the four upheld by Government, in terms of the Articles of the Treaty of Union. *Helensburgh,* a watering-place on the Clyde. *Kirkintilloch,* with manufactures of hats, cotton-weaving, and iron-foundries. *Renton,* where Smollett was born, 1721.

19. **Bute and Arran,** two large islands, with several smaller, in the Firth of Clyde.—G.C. of Bute: Devonian in S., Silurian in the middle, and mica slate in N.; while that of Arran is extremely varied, being almost an epitome of the geology of Great Britain. Both islands are mountainous in the N. and undulating in the S. Goatfell, in Arran, attains a height of 2874 feet, and the entire island is celebrated for its romantic scenery and interesting geological features. The climate of Bute is very mild and moist, which renders it the resort of many invalids.

TOWNS. *Rothesay,* at the head of a bay on the east side of Bute; a famous resort of invalids and sea-bathers. *Lamlash,* in Arran, with a large and well-protected harbour.

20. **Argyll,** N. of Bute, chiefly consisting of peninsulas and islands in the extreme west of Scotland.—G.C.: Metamorphic rocks with large patches of granite and trap. It is the second largest county in Scotland, and one of the most thinly peopled: area, 3255 square miles; population, 89,298, being 27 persons to each square mile. Surface mountainous, and only a small part cultivated; cattle largely reared for exportation; manufactures and minerals unimportant.

TOWNS. *Inverary,* on Loch Fyne, principally supported by its herring-fishery. *Campbelton,* on the east coast of Cantyre, with distilleries and malt-houses.

21. **Perth,** N.E. of Argyll, in the basins of the Tay and Forth.—G.C.: Chiefly metamorphic rocks, but Devonian and coal in the S. and E. It is the third largest county in Scotland; area, 2835 square miles; population, 138,000, being 49 persons to every square mile. Surface extremely diversified, and comprising both a highland and lowland region; the Grampian range traverses it in a north-easterly direction. The Carse of Gowrie is very fertile, but only two-thirds of the county is under culture of any kind; agriculture greatly improved; beautiful scenery and large plantations. Minerals—coal, limestone, sandstone, marble, and slate; and lead found in some places. Manufactures unimportant, except at Perth.

TOWNS. *Perth,* a beautiful city on the Tay, was once the capital of Scotland, and had the royal palace of Scone in the vicinity: it is very ancient, and figures prominently in Scottish history. *Crieff,* a beautiful little town near the foot of the Grampians. *Auchterarder,*—here originated the famous controversy between the civil and ecclesiastical courts, which led to the dismemberment of the Church of Scotland in 1843.

22. **Forfar**, or Angus, E. of Perth, in the basins of the Tay, South Esk, and North Esk.—G. C.: Nearly all Devonian, but metamorphic in the N.W. Surface varied, and divided into four parallel belts—viz. Braes of Angus, Vale of Strathmore, Sidlaw Hills, and the plain along the Firth of Tay. Soil various, but agriculture in a highly advanced state. Forfarshire is the chief seat of the coarse linen manufacture of Scotland.

TOWNS. *Forfar*, on the Dean, and in the fertile valley of Strathmore, is the nominal capital. *Dundee*, at the mouth of the Firth of Tay, is the third largest town in Scotland, and the principal seat of the linen manufacture in Britain; also famous for its kid gloves; is a highly flourishing town, with a large export trade, and numerous manufactures; it was the birthplace of Hector Boece and of Admiral Lord Duncan. *Arbroath*, also called *Aberbrothock*, from its position on the mouth of the little river Brothock—a large thriving town, with numerous manufactures. *Montrose* exports more corn than any other seaport in Scotland; numerous manufactures; the birthplace of the celebrated Marquess of Montrose, and of Joseph Hume. *Brechin*, an ancient Episcopal city, with an old cathedral, and the residence of Lord Panmure.

23. **Kincardine**, or the Mearns, N.E. of Forfar, between the North Esk and the Dee.—G. C.: Devonian in the S. and gneiss in the N. Surface highly mountainous, being chiefly occupied by the Grampians; but the "How of the Mearns," in the S. and E., is a rich, low, arable tract. The mountains yield extensive pasture for sheep; and about half of the county is under cultivation. Granite and sandstone are the principal minerals; and the chief manufactures are coarse linen and wooden snuff-boxes.

TOWNS. *Stonehaven*, a small town between the rivers Cowie and Carron; has a herring-fishery, and some manufactures of cotton and linen. Near it is Dunottar Castle, formerly the residence of the Earls Marischal, and celebrated in Scottish history. At *Strachan*, near *Banchory-Ternan*, was born Dr Thomas Reid, the eminent metaphysician and moral philosopher, and the ornament of the University of Glasgow.

24. **Aberdeen**, N. of Kincardine, and between the Dee and Deveron.—G. C.: Granite and metamorphic rocks, with two patches of Old Red or Devonian in the W. and N. Surface very mountainous in the S.W., along the Grampians; the rest level or undulating; only one-third arable, which is under the most skilful cultivation; more cattle bred than in any other county in Scotland; and the breeds are considered excellent. The county is especially celebrated for its beautiful granite, large quantities of which are shipped to London; there are also important slate and sandstone quarries, and extensive salmon-fisheries. Manufactures recently very flourishing, especially woollen, cotton, and linen, but now greatly declined. Balmoral Castle, the Highland residence of Queen Victoria, on the river Dee, is in this county.

TOWNS. *Aberdeen*, between the mouths of the Dee and Don, is the fourth town in Scotland in point of population: it is a handsome city, built of beautiful grey-coloured granite; has many fine public edifices, and a place of great trade and manufacture. Marischal College, founded in

1593, by George Keith, Earl Marischal of Scotland, has numerous professors and lecturers, 250 students, 106 bursaries averaging from £5 to £26, and a small museum. *Old Aberdeen*, near the Don, and one mile from the city, with a cathedral erected in 1357, is chiefly famous for its ancient University, chartered in 1494, and founded in 1501; it has spacious buildings, 9 professors, 365 students, 128 bursaries from £5 to £50 value, a museum, and a library of 34,000 volumes. The two Universities are now united, and named the University of Aberdeen. *Peterhead*, a thriving town on the north-east coast, near Buchanness, the most easterly point in Scotland; has an important herring-fishery, and is the great emporium of the whale-fishery. *Huntly*, a neat little town at the confluence of the Deveron and Bogie, and on the great North of Scotland Railway, with magnificent public schools, erected by the Duchess of Gordon, who resides at Huntly Lodge in the immediate vicinity.

25. **Banff**, N.W. of Aberdeen, in the Moray basin, and between the Deveron and the Spey.—G.C.: Mainly metamorphic rocks; but granite in the N., and Old Red in the W. Surface mountainous, except along the coast, where it is level and moderately fertile; only about a third is under cultivation. Cattle-breeding is the principal branch of rural industry; but there are important fisheries carried on in the small towns and villages along the coast. The principal minerals are limestone for agricultural purposes, and granular quartz exported from the Hill of Durn, near Portsoy, to the English potteries.

TOWNS. *Banff* and *Macduff*, seaport towns, at the mouth of the Deveron, with considerable export trade. *Portsoy*, *Cullen*, and *Buckie*, neat little towns on the Moray Firth, with extensive herring-fisheries. *Keith*, on the Isla, at the terminus of the Great North of Scotland Railway, the birthplace of James Ferguson.

26. **Moray**, or Elgin, W. of Banff, in the Moray basin, between the Spey and the Findhorn.—G.C.: Old Red in the N., which is highly fossiliferous, and gneiss in the remainder; surface, level along the firth—elsewhere mountainous; only about one-fifth under cultivation; soil a deep loam, or light and sandy; very fertile in the N., and highly cultivated; fine crops of wheat. Sandstone is the principal mineral, and is extensively exported; other exports are grain, cattle, salmon, and timber from the ancient forests of Strathspey and Darnaway. The principle manufactures are woollens; tanneries, distilleries, and tileworks are numerous.

TOWNS. *Elgin*, on the Lossie, about 5 miles from its seaport (Lossiemouth) has the remains of a beautiful cathedral, erected in 1224—one of the finest ruins in Scotland. *Forres*, a beautiful little town near the Findhorn, with enchanting scenery; celebrated in Shakespeare's "Macbeth."

27. **Nairn**, W. of Moray, in the Moray basin, and drained by the Nairn and Findhorn.—G.C.: Old Red in the N., gneiss in the S., and some granite in the W. Surface mostly rugged and mountainous, but nearly one-half cultivated. Agriculture in an advanced state; but no important minerals or manufactures.

TOWNS. *Nairn*, an antiquated-looking little town on the river Nairn, with exports of fish, stones, grain, and timber: near it Cawdor Castle, where, according to tradition, King Duncan was murdered.

28. **Inverness**, S.W. of Nairn, chiefly in the Ness or Moray basin, is the largest county in Scotland; area, 4256 square miles; population 96,500, being 23 persons to the square mile.—G.C.: Gneiss and mica slate, with a patch of Old Red in the N.E., but trap and Old Red in Skye. Surface highly mountainous; Ben Nevis, the highest mountain in Scotland (4368 feet), is in the S.W. It is well wooded, and a chain of lakes, connected by the Caledonian Canal, passes through the centre. Soil light and unproductive, with more than one-half wholly waste; but there are immense forests where the red and roe deer roam in safety. The county is chiefly pastoral, and the principal exports are black cattle, sheep, and wool. Here the Celtic language and character are still found in their purest forms.

TOWNS. *Inverness*, at the mouth of the Ness, and near the entrance of the Caledonian Canal, a fine, old, romantic town, regarded as the capital of the Highlands, and by far the most populous town north of Aberdeen, with which it is connected by railway. It is the only important town in Britain in which the Gaelic language is usually spoken by all classes of the inhabitants. Near it, *Culloden Moor*, where the pretensions of the Stewart dynasty were finally extinguished in 1746. *Fort George*, the most complete fortification in the kingdom, has accommodation for 2000 men. *Fort Augustus* is now nearly abandoned, but has accommodation for 280 men—and *Fort William* for 100 men.

29. **Ross**, N. of Inverness, and between the Moray Firth and the Minch.—G.C.: Almost wholly metamorphic, but Old Red along the two coasts. Surface very mountainous, and only one-fifth arable; fertile on the Moray Firth, producing excellent wheat; but the main portion is pastoral. The exports are chiefly sheep and wool, and the inhabitants generally are in great poverty.

TOWNS. *Dingwall*, an antique-looking little town at the head of the Cromarty Firth; near it, *Strathpeffer*, with highly medicinal chalybeate and sulphurous springs, resembling those of Harrogate, and frequented by a large number of invalids. *Tain*, a neat thriving town on the Dornoch Firth, and the most important between Inverness and Wick. *Invergordon*, the principal seaport of Ross-shire, with a good pier, will probably be soon connected with Tain by a railway, and with Nairn by steamers. *Stornoway*, on the east coast of the island of Lewis, is the most important town in the Western Islands; considerable trade in herrings and white-fish.

30. **Cromarty**, consists of fourteen detached portions, scattered over the northern half of Ross-shire. This singular arrangement into patches was formed at the request of a former Earl of Cromarty, who desired that one county might contain all his lands wherever situated. Its geology, drainage, soil, &c., same as Ross. The Cromarty Firth is completely land-locked, and affords excellent shelter for shipping.

TOWNS. *Cromarty*, at the entrance of Cromarty Firth, just within the two headlands called the "Sutors of Cromarty," and at the north extremity of the peninsula called the Black Isle, which separates the Moray from the Cromarty Firth, is irregularly built, and of antique appearance; the birthplace of Hugh Miller, who commenced here his illustrious geological career. *Ullapool*, on the west coast, built by the

British Fishery Society, in 1788, has a good harbour, but is falling into

31. **Sutherland**, N. of Ross, and between the Moray Firth and the Atlantic.—G.C.: Nearly all transition and Silurian rocks, with a little Old Red in N.W. and S.E., and an oolitic patch at Brora. Surface wild and mountainous; scenery in many places singularly grand, and containing many lakes, which discharge their waters in three directions. The interior wholly depopulated, this being the centre of the far-famed Highland clearances, which commenced in 1807, and were repeated at various intervals. A vast number of the inhabitants have been expatriated, and the remainder reside in villages and hamlets along the coast, where they support themselves mainly by fishing. The interior is now let out into immense sheep-farms, which are chiefly in the hands of English capitalists: about 220,000 sheep are exported annually. Many of the inhabitants are extremely poor; and though the Duke of Sutherland has done much to promote the education of the rising generation, there is not a newspaper or printing-press in the whole county, nor even a single town deserving the name. Area, 1886 square miles; population, 25,783. The population in 1831 was 25,516.

TOWNS. *Dornoch*, on the Dornoch Firth, opposite Tain, is a mere village, and the smallest county town in the British Isles. It was once the See of the Bishops of Caithness, and its ancient cathedral was repaired by the late Duchess of Sutherland. *Golspie*, a beautiful village on the east coast, with Dunrobin Castle, the ancient residence of the Earls of Sutherland, in the vicinity. *Helmsdale*, the seat of an extensive herring-fishery.

32. **Caithness**, E. of Sutherland, and in the extreme N.E. of the mainland of Scotland, is a peninsula, lying between the Moray and Pentland Firths.—G.C.: Almost wholly Devonian, which is highly fossiliferous in many parts; but along the west border there are several patches of granite; surface flat, destitute of trees, and uninteresting; soil various, a large portion being heath-covered moors, but one-fourth under cultivation; often very fertile, and the agriculture of late greatly improved. Many good roads and piers have been recently constructed for the accommodation of the numerous fishing villages and hamlets on the east coast. About 200,000 barrels of salted herrings are exported annually; other exports are salmon, oats, and flagstones for paving. This county was, in the Middle Ages, held by the Kings of Norway; most of its inhabitants are of Scandinavian descent, and speak a peculiar dialect of the Lowland Scotch, considerably resembling that of Orkney.

TOWNS. *Wick*, including *Pulteneytown*, which is twice its size, is a flourishing town on the east coast, and at the mouth of a river of same name. For the last half-century it has been the headquarters of the Scottish herring-fishery. In 1856 upwards of 1000 boats were here employed in the herring-fishing, chiefly manned by Western Highlanders, who in the month of July congregate here in vast numbers, and then for about six weeks both towns are densely crowded. Here are two spirited weekly newspapers, and a rapidly-increasing export trade, consisting chiefly of herrings to the Baltic. *Thurso*, a beautiful little town on the Pentland Firth, and the most northerly on the mainland of Scotland. Its position is unfavourable to its prosperity as a fishing-town, being exposed to the north, and the rapid dangerous current of the Pentland Firth, across which the Orkneys are seen in all their bold grandeur. There are some manufactures of linen, woollen, and straw-plait; and the chief exports are Caithness flagstones and white-fish. *Scrabster Roads*, in its vicinity, however, is a well-protected harbour, from which steamers regularly ply to Wick, Orkney, and Edinburgh.

33. **Orkney and Shetland** form an insular county N.E. of the mainland. The former consists of an archipelago of 67 islands and islets, but only 27 are inhabited, the principal of which are Pomona or Mainland, South and North Ronaldsha, Hoy, Sanda, Rowsa, and Westra. Area, 600 square miles; population, 31,455; shores bold, the interior generally undulating; climate mild; little snow falls in winter, but the summers chill and moist.—G.C.: Wholly Devonian. Soil good, but agriculture very backward: many of the people employed in fishing, or in taking wild birds and eggs; great quantities of lobsters are shipped to the London market. The Orcadians are expert seamen, and many of them are engaged in the Greenland whale-fishery. The archipelago is singularly destitute of timber, but roots of large trees are frequently found in the peat-mosses. The Orkneys belonged to Norway in the Middle Ages, and were annexed to the Scottish crown in 1468.

Shetland, 48 miles N.E. of Orkney, and 180 miles S.E. of the Faröe group; consists of an archipelago of about 90 islands and islets, of which only 25 are inhabited; area, 945 square miles; population, 31,078. Mainland, the largest island, contains one-half the whole area, and more than a half of the population. The next largest are Yell and Unst, the latter being the most northern island in the British archipelago (lat. 60° 50′ N.)—G.C.: Devonian in the S.; all the rest gneiss, with large patches of trap and granite. Climate mild, but very damp and variable; surface generally mountainous, covered with heath, and destitute of trees; a considerable quantity of tolerable land has been made by long culture. The Shetland ponies are remarkable for their small size and hardihood, and are largely exported; other exports are ling, tusk, and cod. The only native manufacture is knitted hosiery; and the only mineral of importance is chromate of iron, which is exported for a pigment. The people are of Norse extraction. Their language is now English, but indubitable traces of their Scandinavian origin are found in their manners, customs, superstitions, language, and antiquities. Became subject to Norway in the ninth century; embraced Christianity in the thirteenth, and annexed to the Scottish crown at the same time with the Orkneys.

TOWNS.—*Kirkwall*, the capital of the Orkneys and of the county above named, on a bay on the north-east side of Pomona, with an ancient cathedral named St Magnus, and some manufactories of linen and straw-plait; communicates by steamers with Wick, Thurso, Aberdeen, Leith, and Lerwick. *Lerwick*, the principal town in Shetland, on Bressay Sound, and on the S.E. of Mainland, is the most northern town in the

British Isles; has manufactures of straw-plait, and whale, cod, and herring fisheries.

8. **Capes and Promontories.**—St Abb's Head, in Berwickshire; Fifeness, east of Fife; Buddoness, at the northern entrance of Firth of Tay; Girdleness, at the mouth of the Dee; Buchanness (Aberdeenshire), the most eastern point of the mainland of Scotland; Kinnaird Head, at the entrance of the Moray Firth (Aberdeenshire); Tarbetness, the eastern extremity of Ross; Noss Head, and Duncansbay Head, east of Caithness; Dunnet Head, in the Pentland Firth, the most northern point of the mainland of Britain; Old Head, and Dennis-ness, the southern and northern extremities of Orkney; Sumburgh Head, south of Mainland (Shetland); Hermaness, north of Unst, in Shetland, the most northern point in the British archipelago; Strathy Head and Cape Wrath, north of Sutherland; Butt of Lewis and Barra Head, at the northern and southern extremities of Long Island; Aird Point, north of Skye; Point of Ardnamurchan (Argyll), the most western point of the mainland of Britain; Mull of Oe and Mull of Cantyre, in Argyllshire; Mull of Galloway and Burrow Head, in Wigtown, the former being the most southern point of Scotland.

9. **Islands.**—These are very numerous, especially on the north and west coasts, and are naturally divided into three groups:—

On the North Coast.—The Orkneys, N.E. of Caithness: principal, Pomona, Hoy, South Ronaldsha, Shapinsha, Rowsa, Westra, Eda, Stronsa, Sanda, and North Ronaldsha. The Shetlands, N.E. of the Orkneys: principal, Mainland, Yell, Fetlar, and Unst.—(*See* Descriptive Notes, p. 177.)

On the West Coast.—The Hebrides or Western Islands, 160 in number, of which 70 are inhabited, and divided into two clusters, the Outer and Inner Hebrides, which are separated by the Little Minch. The *Outer Hebrides,* called also *Long Island,* lie west of Sutherland and Ross; the principal are, Lewis (including Harris), the largest island in Scotland (60 miles long, 30 miles broad, area 700 square miles); North Uist, Benbecula, South Uist, and Barra, and 52 miles farther W., St Kilda. The *Inner Hebrides:* Skye, Raasay, Rona, Rum, and Eigg, in Inverness-shire; Mull, Coll, Tiree, and Iona, N.W. of Argyll; Jura, Islay, Colonsay, and Scarba, in the estuary of Loch Linnhe; Arran, Bute, and the Cumbraes, in the Firth of Clyde.

On the East Coast: May, Inchkeith, Inchcolm, in the Firth of Forth; Inchcape, or the Bell Rock, off the entrance of the Firth of Tay. Stroma, between Caithness and Orkney; Fair Island, between Orkney and Shetland.

10. **Bays and Estuaries.**—These are also numerous, and generally penetrate far into the land, in a N.E. and S.W. direction. Those on the east side are called *firths* (from Scandinavian—*fiord,* pronounced "fiurth"), those on the W., *lochs,* corresponding to the *Loughs* of Ireland. The principal are:—

Firth of Forth, between the Lothians and Fife; St Andrews Bay, N.E. of Fife; Firth of Tay, between Fife and Forfar; Moray Firth in the N.E. of Scotland, 75 miles wide, between Kinnaird Head and Duncansbay Head (its main parts are, Beauly Firth, between Inverness and Ross; Cromarty Firth, between Ross and Cromarty; and Dornoch Firth, between Ross and Sutherland); Pentland Firth, between Caithness and Orkney; Dunnet Bay, N. of Caithness; Kyle of Tongue, Loch Eribol, and Kyle of Duirness, N. of Sutherland; Loch Laxford, Kyle Sku and Loch Enard, W. of Sutherland; Lochs Broom, Greinord, Ewe, Gairloch, Torridon, Carron, and Alsh, W. of Ross; Sleat Sound, between Inverness and Skye; Loch Hourn, in W. of Inverness; Sound of Raasay, also called Rona Sound, between Skye and Raasay; Lochs Snizort, Bracadale, and Eishart, in W. of Skye; Sound of Harris, between Harris and North Uist; Loch Sunart and Sound of Mull, between Mull and Ardnamurchan; Lochs Linnhe and Eil, forming the western entrance to the Caledonian Canal; Loch Etive, Sound of Jura, West Loch Tarbet, all W. of Argyll; Kilbrannan Sound, between Cantyre and Arran; Loch Fyne, in S. of Argyll; Loch Long, between Argyll and Dumbarton; Firth of Clyde, separating Arran, Bute, and Dumbarton, from Ayr and Renfrew; Loch Ryan, in N. of Wigtown; Wigtown Bay, between Wigtown and Kirkcudbright; Solway Firth, between the S.W. of Scotland and the N.W. of England; the Minch, between the Mainland and the Isle of Skye; Little Minch, between Skye and Long Island; Sound of Islay, between Islay and Jura; North Channel, between Scotland and Ireland.

11. **Mountain System.**—Scotland is a highly mountainous country, there being few or no localities where mountain-ranges do not limit the observer's view in one or more directions. Proceeding from N. to S., we find five principal ranges, all of which are nearly parallel to each other, and follow the general direction of N.E. and S.W., similar to the principal estuaries.

The *Northern Highlands*, consisting of detached groups that commence at the southern border of Caithness, and cover a large portion of Sutherland, Ross, and Inverness, separate the waters which flow into the Moray Firth from those that find their way to the Atlantic. The principal summits are:—

	Feet.
Ben Attow, between Ross and Inverness, ...	4000
Ben Wyvis, near Dingwall, ...	3720
Ben Dearg, near head of Loch Broom, ...	3550
Ben More, in Assynt, Sutherland, ...	3230
Ben Cliberich, S. of Loch Naver, Sutherland, . .	3165
Morven, in S.E. of Caithness, ...	2334

The *Grampians*, the loftiest mountains in the British Isles, extend from sea to sea, between Loch Linnhe in Argyll, to near Stonehaven and Aberdeen on the east coast. They separate, for the most part, the Highlands from the Lowlands, and the basins of the Spey and Dee from that of the Tay on the east side, and the great valley of Glenmore and the Clyde basin on the west side. Length, from Stonehaven to Loch Linnhe, about 100 miles, the height ranging from 2000 feet to upwards of 4000 feet. Ben Nevis, at the western extremity, 4368 feet high, is the culminating-point of the Britannic system. The main range sends off two great lateral branches, one to the N. from the middle of the range, which soon bifurcates and encloses a large portion of Banffshire; and the other to the S., from near Loch Rannoch, in Perthshire, to the isthmus of Cowal in Argyll. Principal summits:—

	Feet.
Ben Nevis,* in the south-west of Inverness,	4368
Ben-y-Gloe, in Blair-Atholl,	3690
Ben Macdui, in the south-west of Aberdeen,	4295
Cairngorm, Banffshire,	4090
Ben Avon, between Banff and Aberdeen,	3826
Cairntoul, Aberdeenshire, near Ben Avon,	4245
Schihallion, Perthshire,	3564
Ben Lomond, Stirling,	3190

Ochil and Sidlaw Range, parallel with the Grampians, and separated from them by the valley of Strathmore, consists of three small chains, which extend across the country from Forfarshire to Stirlingshire, and form the north watershed of the Tay, Forth, and Clyde basins. The *Sidlaw Hills* extend from the river Dean in Forfarshire, to Perth on the Tay, but are of small elevation: the highest summit, the Hill of Sidlaw, is only 1400 feet high. The *Ochils,* between Stirling and the Firth of Tay, attain, in Ben Cleugh, an elevation of 2300 feet; and the *Campsie Fells,* in Stirlingshire, of 1500 feet.

The *Lammermoor and Pentland Range,* separated from the former by the Firth of Forth, and forming the southern boundary of the Forth basin, consists of the following members: the *Lammermoor Hills,* between Haddington and Berwick; highest summit, 1600 feet; the *Moorfoot Hills,* western continuation of the Lammermoors; the *Pentland Hills,* in Mid-Lothian, 1878 feet; and *Tinto Hill* in Lanarkshire, 2316 feet.

The *Cheviot and Lowther Range,* sometimes called the Southern Highlands, extends from Peel Fell in the Cheviots proper (for which see "England," par. 11), to Loch Ryan in Wigtownshire, and forms the great watershed of the S. of Scotland, separating the basins of the Clyde and Tweed on the N. from those of the Solway and Tyne on the S. The highest summits of this range are:—

	Feet.
Cheviot Peak, near Wooler, Northumberland,	2684
Carter Fell, do. do.,	2020
Peel Fell, do. do.,	
Ettrick Pen in Selkirk,	2200
Hart Fell, in Dumfries,	2635
Broad Law, in Peebles, highest of the range,	2741
Lowther Hill, in Lanark,	2520

12. **Principal River-Basins.**—As the mountain-ranges in Scotland stretch from N.E. to S.W., the intervening river-basins follow, in their greatest length and inclination, the same direction.—(See "River-Basins of England.") The following table gives all the really important basins in the kingdom; and

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* No mountain in Scotland attains to the limit of perpetual congelation, which, in the latitude of the Cheviots, is 5000 feet high, and in that of the Grampians 4500. Ben Nevis only wants about 150 feet of altitude to be capped continually with snow. Some of the ravines in the Grampians and North Highlands retain the snow over summer.

though only eight in number, they embrace 30 out of the 33 county towns, and occupy about two-thirds of the entire surface. The three county-towns not embraced in the table are Cupar-Fife, Stonehaven, and Kirkwall. The arrangement of the table is similar to that already referred to under "England." The five basins which stand first on the list incline towards the North Sea, and the remaining three towards the Atlantic and Irish Sea.

NAME OF BASIN.	Length in Eng. Miles.	Area in Square Miles.	CAPITALS OF COUNTIES, AND OTHER LARGE TOWNS.
Tweed, . . .	96	1820	Peebles, Greenlaw, Jedburgh, Selkirk.
Forth,*. . .	100	1400	Haddington, Edinburgh, Kinross, Linlithgow, Clackmannan, Stirling, *Leith.*
Tay, . . .	160	2250	Perth, Forfar, *Dundee.*
Dee and Don,	90	1230	Aberdeen.
Ness & Moray Basin,	120	5000	Banff, Elgin, Nairn, Inverness, Cromarty, Dingwall, Dornoch, Wick.
Linnhe Basin,	120	1500	(No towns except *Oban* and *Ft. William.*)
Clyde, . . .	135	2500	Ayr, Rothesay, Inverary, Dumbarton, Renfrew, Lanark, *Glasgow*, *Paisley.*
Solway Basin,	90	2500	Wigtown, Kirkpatrick, Dumfries.

Three of the eight basins lie N. of the Grampian Chain, viz. the Moray basin, and the basin of the Dee and Don (the waters of which nearly unite), on the east side, and the Linnhe basin on the west; and their united areas comprise almost the whole of the district known as the Scottish Highlands. Immediately S. of them lie the basins of the Tay and Forth on the east side, and that of the Clyde on the west: these touch each other, and are separated from the former three by the Grampian Chain, and from the Tweed and the Solway basins by the Lammermoor and Lowther ranges: they are fertile and highly cultivated; contain most of the large towns, and many rich mines of coal, ironstone, and other valuable minerals; and have been called respectively the garden, the granary, and the workshop of Scotland. The first is separated from the second by the Ochil Hills, and the second from the third by the Campsie Fells. The basins of the Tweed and Solway constitute the Southern Highlands, and form an excellent pastoral country. They are separated from England by the Cheviot range, and from each other by the Lowthers; while the Tweed basin is separated from the Forth by the Lammermoor Hills, and the Solway basin from that of the Clyde by the Lowther range.

13. **Tabular View of Rivers and Towns.**—For the arrangement adopted in the following table, compare what is said under "England," par. 13; the only difference being that

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* In estimating the length and area of the river-basins, those of the estuaries are included.

here all towns and villages are given that have more than 500 inhabitants; large towns, or those printed in Roman letters, denote those having 2500 inhabitants or upwards; county towns are in SMALL CAPITALS, and all others in *italics.* One hundred rivers are here enumerated, thirty-three of which enter the ocean directly, the remainder being their tributaries; and 300 towns, one-third of which are large towns and capitals of counties, with a population exceeding 2500.—(Compare under "England," par. 13.)

Basins inclined to the North Sea.

Rivers.	*Towns.*
Tweed,	Berwick (England), *Coldstream,* Kelso, *Melrose,* PEEBLES.
Whiteadder, *l*	*Chirnside,* Dunse.
Blackadder,	GREENLAW.
Till,	*Wooler* (England).
Beaumont, *l*	*Yetholm.*
Teviot,	Kelso, *Ancrum, Denholm,* Hawick.
Jed,	JEDBURGH.
Leader, *l*	*Earlston,* Lauder.
Gala, *l*	Galashiels.
Ettrick,	SELKIRK.
Eddleston, *l*	PEEBLES.
Lyne, *l*	*Linton.*
Biggar, *l*	*Biggar.*
Eye,	*Eyemouth.*
Co. of Haddington,	Dunbar.
Tyne,	HADDINGTON.
Gifford,	*Gifford.*
Forth,	*North Berwick, Dirleton, Cockenzie, Tranent,* n., *Prestonpans,* Musselburgh, Portobello, Leith, EDINBURGH, *Newhaven, South Queensferry,* Bo'ness, *Grangemouth, Airth,* all on the south side of the Firth; *Crail, Kilrenny, Anstruther, Pittenweem, Elie, Largo, Leven, Buckhaven, Wemyss,* Dysart, Kirkcaldy, *Kinghorn,* Burntisland, *Aberdour, Inverkeithing, Culross,* Kincardine, Alloa, all on north side. STIRLING, *Aberfoyle,* both on the river.
Leven, *l*	*Leven, Leslie,* KINROSS, *Milnathort.*
Esk,	Musselburgh, Dalkeith; *Lasswade, Loanhead, Penicuik.*
Leith Water,	Leith, *Colinton.*
Almond,	*Cramond, Ratho, Mid-Calder, Whitburn.*
Lyne, *l*	Dunfermline.
Avon,	LINLITHGOW, Bathgate.
Carron,	*Grangemouth, Carron,* Falkirk, n., *Camelon,* Denny.

Basins inclined to the North Sea (continued.)

Rivers.	*Towns.*
Black Devon, *l*	CLACKMANNAN.
Devon, *l*	Alva, Tillicoultry, *Dollar.*
Bannock,	*St Ninians,* Bannockburn.
Allan, *l*	*Bridge of Allan, Dunblane.*
Teith, *l*	*Doune, Callander.*
Eden,	St Andrews, CUPAR-FIFE, *Falkland,* Auchtermuchty, *Strathmiglo.*
Ceres,	*Ceres.*
Tay,	*Tayport* or *Ferry-Port-on-Craig,* Broughty Ferry, Dundee, *Errol,* Newburgh, PERTH, *Scone, Dunkeld, Logierait, Aberfeldy, Killin.*
Earn,	*Abernethy, Bridge of Earn, Muthill,* n., Crieff, *Comrie.*
Dunning,	*Dunning.*
Ruthven,	Auchterarder.
Almond,	*Methven.*
Isla, *l*	Coupar-Angus.
Ericht,	Blairgowrie.
Dean, *l*	*Glammis,* FORFAR.
Gairie,	Kirriemuir.
Alyth,	*Alyth.*
Tummel, *l*	*Logierait.*
Brothock,	Arbroath.
South Esk,	Montrose, Brechin.
North Esk,	*Marykirk.*
Luther, *l*	*Luthermuir,* Laurencekirk.
Bervie,	*Bervie.*
Carron,	STONEHAVEN.
Dee,	ABERDEEN ; *Banchory-Ternan, Kincardine O'Neil, Aboyne, Ballater, Balmoral, Castleton of Braemar,* all mere villages.
Don,	Old Aberdeen, Woodside, *Kintore,* Inverury.
Urie, *l*	Inverury, *Old Meldrum,* n., *Insch,* n.
Ythan,	*Ellon, Methlick.*
Ugie,	Peterhead, *Strichen, New Pitsligo.*
N. Co. Aberdeen,	Fraserburgh, *Rosehearty.*
Deveron,	Banff, Macduff, Turriff, Huntly.
Isla, *l*	Keith.
Bogie,	Huntly, *Rhynie.*
N. Co. Banff,	Portsoy, Cullen, Buckie.
Spey,	*Garmouth, Fochabers, Rothes, Granton, Kingussie.*
Fiddich,	*Dufftown.*
Avon,	*Tomantoul.*
Lossie,	*Lossiemouth,* ELGIN.
Co. of Moray,	*Burghead.*
Findhorn,	*Findhorn,* Forres, n.
Nairn,	NAIRN.
Beauly F. and R. Ness,	*Fort George, Fortrose, Beauly ;* INVERNESS, *Fort Augustus.*

Basins inclined to the North Sea (continued.)

Rivers.	*Towns.*
Cromarty F. & R. Conan,	CROMARTY, *Invergordon,* DINGWALL.
Dornoch F. & R. Oikel,	Tain, DORNOCH, *Bonar Bridge.*
E. Co. Sutherland,	*Golspie, Brora, Helmsdale.*
E. Co. Caithness,	*Dunbeath, Lybster,* WICK.
Pentland Firth,	Thurso.

Basins inclined to the Atlantic.

Kyle of Tongue,	*Tongue, Melness.*
L. Eribol,	*Eribol.*
Kyle Sku,	*Edderachillis.*
Loch Inver,	*Inver.*
Loch Broom,	*Ullapool.*
Loch Ewe,	*Poolewe.*
Gairloch,	*Gairloch.*
L. Carron,	*Loch Carron.*
Sound of Mull,	*Tobermory* (Mull).
Lochs Linnhe & Eil,	*Oban, Fort William.*
Kilb. Sd. & L. Tyne,	Campbelton, *Tarbert, Lochgilphead,* INVERARY.
Clyde, F. & R.	*Lamlash* (Arran), Millport (Cumbrae), ROTHESAY (Bute), AYR, *Troon,* Irvine, Saltcoats, *Ardrossan,* Largs, *Dunoon,* Gourock, Greenock, Helensburgh, Port-Glasgow, DUMBARTON, RENFREW, *Ellerslie,* Govan, Partick, Glasgow, Rutherglen, *Cambuslang, Bothwell, Holytown,* n., *Low Blantyre,* Hamilton, Carluke, n., LANARK, *New Lanark.*
Doon, *l*	AYR, n., *Dalmellington.*
Ayr, *l*	AYR, *Stair, Muirkirk.*
Coila, *l*	*Coylston.*
Lugar, *l*	*Ochiltree, Old Cumnock.*
Irvine, *l*	Irvine, Kilmarnock, *Galston, New Mills.*
Garnock,	Kilwinning, Dalry, Kilbirnie.
Annock,	Stewarton.
Cessnock, *l*	*Mauchline.*
Leven,	DUMBARTON, *Renton,* Alexandria, *Bonhill.*
Cart, *l*	RENFREW, Paisley, Pollockshaws.
Black Cart, *l*	Johnstone, Kilbarchan, *Lochwinnoch,* Beith.
Levern, *l*	Barrhead, Neilston.
Kelvin,	Kirkintilloch, Kilsyth, Cumbernauld, n.
N. Calder,	Airdrie.
S. Calder,	Wishaw, *Stane* or *Shotts Works.*
Avon, *l*	Hamilton, Stonehouse, Strathaven.
Nethan, *l*	*Lesmahago.*
Douglas, *l*	*Douglas.*
Medwin,	*Carnwath.*
Gonar, *l*	*Leadhills.*
Girvan,	Girvan, Maybole.

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
Stinchar,	*Ballantrae.*
Loch Ryan,	Stranraer.
W. Co. Wigtown,	*Port-Patrick.*
Wigtown Bay,	*Whithorn,* WIGTOWN, *Creetown.*
Cree,	Newton-Stewart.
Fleet,	*Gatehouse.*
Dee (Solway F.,)	KIRKCUDBRIGHT, *Castle-Douglas.*
Ken, *l*	*New Galloway, Dalry.*
Urr (do.),	*Urr.*
Nith (Solway),	Maxwelltown, DUMFRIES, *Thornhill, Sanquhar.*
Cairn,	*Minniehive.*
Scarf,	*Penpont.*
Annan (do.),	Annan, *Ecclesfechan, Lockerby,* n., *Lochmaben,* n., *Moffat.*
Sark (do.),	*Gretna Green.*

14. **Lakes.**—With the exception of Finland and Canada, there is no country in the world more remarkable for its lakes than Scotland. They are in general very small in size, as the deep inlets of the ocean prevent any great collection of inland waters; but they are celebrated for their beauty and wild grandeur. Loch Lomond, the largest of them, 24 miles long, 8 broad, and with an area of 40 square miles, is justly famed for its splendid scenery. Arranged in the order of the river-basins in which they are situated, they may be briefly described and easily remembered. We begin with the Tweed on the east coast and proceed northward:—

Tweed Basin: *St Mary's Loch,* in Selkirkshire, drained by the Yarrow.

Forth: *Loch Ard,* in Perthshire, one of the sources of the Forth; *Loch Leven,* in Kinross, drained by the Leven; and *Lochs Vennachar, Achray, Katrine, Lubnaig,* and *Voil,* all drained by the Teith.

Tay: *Lochs Dochart* and *Tay,* in Perthshire, at the source of the Tay; *Loch Earn,* at the source of the Earn; and *Lochs Tummel, Rannoch, Ericht, Lydoch,* drained by the Tummel.

Dee: *Loch of Skene,* drained by the Leuchar, Aberdeenshire.

Spey: *Loch Morlich, Loch-an-Eilan,* and *Loch Inch,* in Inverness.

Ness: *Ness, Oich, Garry,* and *Quoich,* in Inverness.

Cromarty and Conan Basin: *Glass, Luichart, Fannich.*

Dornoch and Oikel Basin: *Loch Shin,* 18 miles long, in Sutherland.

Helmsdale: *Loch-na-Clar,* in Sutherland.

Naver: *Loch Naver,* in Sutherland.

Ewe: *Loch Maree,* in Ross.

Moidart and Shiel Basin: *Shiel,* Inverness and Argyll.

Linnhe and Spean Basin: *Lochy, Arkaig, Treag, Oochan,* and *Laggan,* in Inverness; and Lochs *Awe* and *Avich,* in Argyll, drained by the Awe.

Clyde: *Loch Lomond* (40 square miles), drained by the Leven.

Doon: *Loch Doon,* in Ayrshire.

Dee: *Loch Ken,* in Kirkcudbright.

15. **Internal Communication.**—Scotland, being a highly mountainous country, can never vie with the sister kingdom in the extent or completeness of her internal communication ; yet her noble firths and estuaries, which indent the coast in all directions, give her important natural advantages ; while her turnpike roads, canals, and railways, abundantly attest the energy and public spirit of her sons.

RAILWAYS.—These now consist of twenty main lines, and in January 1859 there were 1342 miles open for traffic, with some hundreds more in the course of construction. These railways are as yet chiefly confined to central Scotland, or the basins of the Forth, Clyde, and Tay ; Edinburgh and Glasgow being the two *foci* from which they nearly all radiate. Two lines connect Glasgow with Carlisle and the West of England ; Edinburgh sends one line to the west and another to the east of England ; other two lines, pursuing different routes, connect Edinburgh and Glasgow with each other ; and the majority of the remainder connect Edinburgh and Glasgow with the large towns on the east coast—viz., Stirling, Perth, Dundee, Arbroath, Montrose, Forfar, Aberdeen, and Inverness, the last being the extreme north limit to which railway communication has extended in Great Britain. In the west of Scotland there is no railway north of the *Glasgow and Helensburgh* line on the right bank of the Clyde.

Edinburgh to Berwick, by the *North British Railway*, 58 miles.

Edinburgh to Carlisle, by *Caledonian Railway*, 141 miles.

Edinburgh to Glasgow, by *Edinburgh and Glasgow Railway*, 46 miles.

Edinburgh to Glasgow, by *Caledonian Railway*, 59 miles.

Edinburgh to Stirling and Perth, first by the *Edinburgh and Glasgow* to Castlecary, and then by the *Scottish Central*, 45 : total distance to Perth, 68 miles.

Edinburgh to Dundee, by the *Edinburgh, Perth, and Dundee Railway*, crossing the Firth of Forth at Granton, 50 miles.

Glasgow to Carlisle, by the *Caledonian Railway*, 105 miles.

Glasgow to Carlisle, by the *Glasgow and South-Western*, passing Paisley, Kilmarnock, and Dumfries, 125 miles.

Glasgow to Ayr, by do. and *Glasgow and Ayr Railway*, 40 miles.

Glasgow to Greenock, by *Glasgow and Greenock Railway*, 22 miles.

Glasgow to Helensburgh, 24 miles, with a branch from Dumbarton to Balloch on Loch Lomond.

Glasgow to Perth, by *Edinburgh and Glasgow* to Castlecary, and thence by *Scottish Central*, 62½ miles.

Perth to Forfar, per *Scottish Midland Junction*, by Cupar-Angus, 32½ miles.

Perth to Forfar, per *Dundee and Perth* to Dundee, and per the *Dundee and Arbroath* to Arbroath, &c., 53 miles.

Forfar to Aberdeen, per *Aberdeen Railway*, 57¾ miles.

Aberdeen to Keith, per *Great North of Scotland* (with branches to Banff, Alford, Old Meldrum, and Portsoy), 53½ miles.

Aberdeen to Banchory, per the *Deeside Railway*, 17 miles.

Keith to Nairn, per *Inverness and Aberdeen Junction.*

Nairn to Inverness, per the *Inverness and Nairn.*

CANALS.—The principal are the following :—

Caledonian Canal, between the Beauly Firth and Loch Linnhe, connects the Moray Firth with the Atlantic ; total length 60 miles, but only 23 miles required to be executed, as the canal passes through Lochs

Ness, Oich, and Lochy, and terminates in Loch Eil, an arm of the sea. Inverness stands near the one extremity and Fort William near the other; and the long, narrow, intervening valley is called Glenmore. Highest level, 91 feet; breadth, 120 feet; original depth, 15 feet; number of locks, 25; commenced in 1805 and finished in 1822; total cost, £1,000,000 sterling; but repaired and reopened in 1847 at an expense of £200,000.

Forth and Clyde Canal, from Glasgow to Grangemouth in Stirling, unites the Irish Sea with the German Ocean; length, 35 miles; finished in 1790, and extended from near Falkirk to Edinburgh by the *Union Canal*, finished in 1822, and 31 miles long.

Paisley Canal, from Glasgow, through Paisley, to Johnstone in Renfrew; length 11 miles.

Monkland Canal, between Glasgow and Airdrie, passing by the Old Monkland Coal-Works, 12 miles.

Crinan Canal, across the isthmus of Cantyre, connects Loch Fyne with the Sound of Jura, 9 miles.

Glenkens Canal, in Kirkcudbrightshire, from the mouth of the Dee, through Loch Ken, to Dalry, 26 miles.

TURNPIKE ROADS.—In consequence of the excellent materials for road-making which everywhere abound, and the skill and science of Scottish trustees and surveyors, the turnpike roads of Scotland are unequalled by those of any other country. In 1829 there were 3666 miles open; these were managed by 190 turnpike trusts, and yielded a tollage of £187,000.

16. **National Character.**—Scotchmen are characterised by many striking and well-marked peculiarities. In disposition they are grave, serious, and reflecting; in their habits frugal, industrious, and persevering; their morals will bear a favourable comparison with those of any other nation; providence, honesty, and extreme caution are among their most distinguishing traits of character. They do not readily associate, and far less amalgamate, with foreigners among whom they may reside, but will spare no amount of labour and self-denial to promote the welfare of their fellow-countrymen. Though in educational institutions they are far excelled by several European countries, they will not yield to any in intelligence and sagacity. They have a metaphysical turn of mind, and are rather addicted to religious controversy. They quit, without regret, their native land, as it affords them few opportunities of distinction, and are found in great numbers in the principal cities of England, in the British colonies, and many other countries, where they almost invariably attain to positions of trust and distinction; but such is their ardent love of country that in the evening of life they return to Scotland to spend their hard-earned fortune, and to rest in the graves of their fathers. They are eminently religious, strongly attached to the presbyterian form of church government, and strongly averse to popery and episcopacy. The annals of no other nation can show such a resolute determination in defence of civil and religious liberty. The Holy Scriptures are daily read in all the common schools, and the poorest peasant can generally read and understand them. The great and saving truths of the Bible are familiar to almost every one; and the divine code of

moral law is observed by all classes of the community. The Sabbath is universally a day of rest and religious observance; while life and property are safer than in any other country. Illegitimacy and intemperance are the social vices which most deeply stain the national character. No fewer than 9 per cent of all the births, in 1858, were illegitimate; while in Sweden the ratio was only 6.5 per cent; in Norway, 6.6; in England, 6.7; in Belgium, 6.7; in France, 7.1; in Prussia, 7.1; in Denmark, 9.3; in Hanover, 9.3; and in Austria, 11.3 per cent. The agricultural counties are worse in this respect than the seats of commercial and manufacturing enterprise: thus the county of Renfrew shows only 6.1, Lanark 6.7, and Edinburgh 8.7 per cent, as illegitimate; while in Aberdeen it ascends to 16.2, in Banff to 17.1, and in Nairn to the enormous proportion of 17.5 per cent.

17. **Literature.**—Scotland, though far from being an opulent country, and though her seats of learning are poorly endowed, has produced a cluster of names in all branches of science, philosophy, and arts, that would reflect the highest honour on any nation. The following are a few of the most eminent names in the various departments of literature and science:—

POETRY: *In Gaelic poetry*—Ossian and Dugald Buchanan; *in Latin*—G. Buchanan; *in Scottish*—Gawin Douglas, Drummond, Dunbar, Lyndsay, Ramsay, Tannahill, Macneill, Tennant, Hogg, and Robert Burns; *in English*—Thomson, Beattie, Scott, Campbell, Pollok, J. Montgomery, and Prof. Wilson.

HISTORY: Buchanan, Burnet, Hume, Robertson, Henry, Russell, Watson, Scott, Mackintosh, Alison, Carlyle.

PHYSICAL SCIENCE: Napier, Ferguson, Gregory, Watt, Playfair, Maclaurin, Leslie, Sir David Brewster, Robert Brown, Hugh Miller, John Fleming, Sir Charles Lyell, and Sir Roderick I. Murchison.

MENTAL PHILOSOPHY: Reid, Hume, Kames, Stewart, Brown, Mackintosh, Adam Smith, and Sir W. Hamilton.

THEOLOGY: Knox, Leighton, Burnet, Boston, Maclaurin, Macknight, Campbell, Gerard, Brown of Haddington, Halyburton, Witherspoon, M'Crie, and Thomas Chalmers.

MEDICINE: Pitcairn, Munro, Gregory, Cullen, Abercrombie, W. Hunter, Baillie, Alison, Simpson, Christison, A. Combe, Abernethy, J. Hunter, John Bell, Sir Charles Bell, Sir James Clark, Sir John Forbes, Liston, Lizars, Syme, Miller.

TRAVELS: Bruce, Park, Clapperton, Simpson, Sir J. Ross, Dr Livingstone.

FINE ARTS: Wilkie, Nasmyth, Raeburn, Ramsay, Jameson.

MISCELLANEOUS: Ruddiman, Boswell, Smollett, Mackenzie, Adam, Blair, Jeffrey, Brougham, Prof. Wilson, Sir W. Scott.

IRELAND.

1. **Position and Boundaries.**—Ireland, otherwise called *Erin* and *Hibernia*, is the second largest island in the British archipelago. The Irish Sea, with its two inlets, the North Channel and St George's Channel, form its western boundary, separating it from Great Britain; while on the remaining three sides it is bounded by the Atlantic. Lying between lat. 51° 26′ and 55° 21′ N., and lon. 5° 26′ and 10° 28′ W., the mainland occupies nearly 4° of lat. and a little more than 5° of lon.

2. **Form and Extreme Points.**—The general form is a rhomboid or oblique parallelogram, the longer diagonal of which, if produced, would pass through the most easterly point of Scotland (Buchanness). The four sides are formed by lines passing through Fair Head in Antrim, Erris Head in Mayo, Mizen Head in Cork, and Carnsore Point in Wexford. Properly speaking, these are the extreme points; but Malin Head in Donegal is the most northern point of the mainland; Mizen Head the most southern; Dunmore Head, in Kerry, the most western; and the coast of Down (lon. 5° 26′) the most eastern.

3. **Line of Coast.**—The coast line, which is wavy and continuous on the east side, but deeply indented on the W. and N., measures about 2200 miles, and affords 1 mile of coast to every 15 square miles of surface. The eastern coast is in general low and flat, and the navigation is obstructed by numerous sandbanks and sunken rocks, which are especially numerous between Fair Head and Dublin; but the coasts along the other sides are bold and rocky, and form a noble barrier against the waves of the Atlantic.

4. **Area and Dimensions.**—The area, according to the late Ordnance Survey, is 32,512 square miles, or 20,808,271 acres. It is nearly two-fifths of the size of Great Britain, and one-eighth larger than Scotland. The extreme length from Malin Head in the N. to Mizen Head in the S., is 306 miles; and the extreme breadth from Dunmore Head in the W. to Carnsore Point in the E., 175 miles, or 180 miles from the east coast of Down to the west of Mayo. The smallest breadth is between the opposite bays of Dublin and Galway, 110 miles.

5. **Population.**—The population, in 1851, was 6,553,290; in 1841 it was 8,066,584, showing a decrease in ten years of 1,513,294. The first regular census was taken in 1821, when the population was 6,801,000, or a quarter of a million greater than it is at present. The astonishing decrease during the last ten years is mainly attributable to the famine of 1845-7, and to the immense tide of emigration that has subsequently taken place. Ireland doubled its population in the half-century between 1792 (when it was estimated

at 4,088,000) and 1841. At the latter date it had 252 inhabitants to every square mile; it has now only 201.*

6. **Political Divisions.**—Ireland is divided into 4 Provinces —viz., Ulster, Leinster, Munster, and Connaught, which are subdivided into 32 counties as follows :—

ULSTER, IN THE N.E., HAS 9 COUNTIES.

1. **Antrim.**—BELFAST, the capital of the county and province, 100.3, Carrickfergus 3.5 (Belfast Lough), Lisburn 6.6 (Lagan), Larne 3.1 (L. Larne), Ballymoney 2.6 n. (Bann), Antrim 2.6 (Sixmile Water), Ballymena 6.5 (Braid).

TOWNS from 2500 to 750 Inhabitants.—Glenarm, Ballycastle, Bushmills, Portglenone, Randalstown.

2. **Down.**—DOWNPATRICK 3.8 n., Killyleagh, 5 p., Newton-Ards 10.1 (L. Strangford), Newry 13.5 (Newry), Donaghadee 2.8 (east coast), Bangor 2.8 (Belfast L.), Banbridge 3.3 (Bann).

Crossgar, Ballynahinch, Portaferry, Rosstrevor, Warren - Point, Rathfryland, Castle Welland, Killough, Ardglass, Hillsborough, Moira, Dromore.

3. **Armagh.**—ARMAGH 10.2 (Callen), Lurgen 4.2 n., Portadown 3.1 n. (Bann).

Keady, Tanderagee, Market-Hill, Newtown-Hamilton.

4. **Monaghan.**—MONAGHAN 3.5 (Ulster Canal), Carrickmacross 2.5 (Glyde), Clones 2.3 n. (Wattle).

Castle Blaney, Ballybay.

5. **Cavan.**—CAVAN 3 n., Belturbet 2.1 (Erne), Cootehill 2.1 (Annalee).

Killashandra, Kingscourt, Bailieborough.

6. **Fermanagh.**—ENNISKILLEN 5.9 (Erne).

Irvingstown, Newtown-Butler.

7. **Donegal.**—LIFFORD .570 (Foyle), Ballyshannon 3.7 (Erne).

Killybegs, Raphoe, Buncrana, Rathmelton, Letterkenny, Donegal.

8. **Londonderry.**—LONDONDERRY 19.9 (Foyle), Coleraine 5.9 (Bann), Newton-Limavady 3.2 (Roe).

Kilrea, Garvagh, Castlo Dawson, Magherafelt, Maghera, Dungiven.

9. **Tyrone.**—OMAGH 3, Strabane 4.9 (Mourne), Cookstown 3 (Ballinderry), Dungannon 3.8 n. (Blackwater).

Newton-Stewart, Fintona, Aughnacloy, Ballygalley, Clogher.

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* The Atlas published by the Society for the Diffusion of Useful Knowledge, in its latest issue (1853) gives the population at 6,515.794, and the area at 28,832 statute miles, or 18,484,000 acres. The population of Ulster it states at 2,004,289; of Munster, 1,831,817; Leinster, 1,667,771; and Connaught, 1,011,917.

LEINSTER, IN THE S.E., 12 COUNTIES.

10. **Louth.**—DUNDALK 9.8 (Castleton), Ardee 2.8 (Dee), Drogheda, partly in Meath, 16.8 (Boyne).

Carlingford, Castle Bellingham, Collon.

11. **Meath.**—TRIM 1.9, Navan 4 (Boyne), Kells 4 (Blackwater).

Athboy.

12. **Dublin.**—DUBLIN, capital of Ireland, 258.4 (Liffey), Kingstown 10.5 (Dublin Bay), Balbriggan 2.3 (east coast).

Howth, Baldoyle, Swords, Rush.

13. **Wicklow.**—WICKLOW 3.1 (Vartry), Arklow 3.3 (Avoca), Bray 3.2 (Bray).

Rathdrum, Carnew, Baltinglass.

14. **Wexford.**—WEXFORD 12.8, Enniscorthy 7.7 (Slaney), Gorey 4.4 n. (Bann), New Ross 9.1 (Barrow).

Taghmon, Newton-Barry.

15. **Kilkenny.**—KILKENNY 20 (Nore), Callan 2.4 (King's River).

Thomastown, Freshford, Ballyragget, Durow, Graigue, Gowran, Urlingford, Castle Comer.

16. **Queen's County.**—MARYBOROUGH 2.1 n., Portarlington 2.7, Mount Mellick 3.1 (Barrow).

Ballynakill, Abbeyleix, Mountrath, Borris-in-Ossory, Stradbally.

17. **King's County.**—TULLAMORE 4.6 n. (Cloddagh), Birr or Parsonstown 5.5 (Lower Brusna), Portarlington, partly in Queen's County, 2.7 (Barrow).

Clara, Banagher, Edenderry.

18. **West Meath.**—MULINGAR 4.8 (Brusna), Athlone 6.2 (Shannon).

Kilbeggan, Castle Pollard.

19. **Longford.**—LONGFORD 4.1 (Camlin).

Ballymahone, Edgeworthstone, Granard.

20. **Kildare.**—ATHY 2.2, Kildare 1.3 n. (Barrow), Naas 3 n. (Liffey), Maynooth 2.2 (Rye).

Monastereven, Leixlip, Celbridge, Kilcock.

21. **Carlow.**—CARLOW 9.1 (Barrow), Tullow 3 (Slaney).

Leighlin, Hacketstown.

MUNSTER, IN THE S.W., 6 COUNTIES.

22. **Waterford.**—WATERFORD 25.3, Clonmell, partly in Tipperary, 15.2 (Suir), Dungarvan 6.3 (Dungarvan Bay).

Cappoquin, Lismore, Tallow, Tramore.

23. **Cork.**—CORK 85.7, Macroom 3.7 (Lee), Queenstown or Cove of Cork, 11.4, Middleton 6, West Passage 2.9 (Cork Harbour),

Skibbereen 6.4 (Ilen), Clonakilty 3.3 (Clonakilty Bay), Kinsale 5.5 (Kinsale Harbour), Bandon 7.9 (Bandon), Youghal 7.4, Fermoy 5.8, Mallow 5.4 (Blackwater), Mitchelstown 3.1 (Funcheon), Kanturk 6.5 (Allow), Charleville 2.7 (Maig).

Cloyne, Bantry, Rosscarberry, Dunmanway, Millstreet, Rathcormack, Kilworth, Doneraile, Buttevant.

24. **Kerry.**—TRALEE 13.8 (Lee), Dingle 3.3 (Dingle Bay), Killarney 5.9 (L. Killarney).

Tarbert, Listowel, Cahirciveen, Castle Island, Kenmare.

25. **Clare.**—ENNIS 7.5 (Fergus), Kilrush 4.5 (Shannon).

Clare, Killaloe, Ballina, Six-mile Bridge.

26. **Tipperary.**—TIPPERARY 8.2 (Arra), Carrick-on-Suir 6.2, Clonmell, partly in Waterford, 15.2, Cahir 3.7, Cashel 8.2, Thurles 5.9 (Suir), Nenagh 7.3 (Nenagh), Roscrea 3.4 (Lower Brusna).

Killenaule, Clogheen, Borrisocane.

27. **Limerick.**—LIMERICK 53.4 (Shannon), Rathkeale 3, Newcastle 2.7 (Deal).

Askeaton, Croom, Kilmallock, Bruff.

CONNAUGHT, IN THE W., 5 COUNTIES.

28. **Galway.**—GALWAY 23.7 (Corrib), Tuam 7.8 (Clare), Loughrea 3.7 (L. Rea), Gort 5 n. (Cooter), Ballinasloe, partly in Roscommon, 6.5 (Suck).

Oughterard, Dunmore, Headford, Cliffden, Athenry, Portumna, Aghrim.

29. **Mayo.**—CASTLEBAR 4.1 (Castlebar), Ballina 6.6 (Moy), Westport 4.1 (Clew Bay).

Crossmolina, Killala, Belmullet, Newport, Ballinrobe.

30. **Sligo.**—SLIGO 11.2 (Garvogue).

Ardnaree, part of Ballina, east of the river Moy.

31. **Leitrim.**—CARRICK-ON-SHANNON 1.8 (Shannon).

Manor-Hamilton.

32. **Roscommon.**—ROSCOMMON, 3.1 part of Ballinasloe, 6.5 (Suck), Athlone, partly in West Meath, 6.2 (Shannon), Boyle 3.5 (Boyle Water).

Castlereagh, Strokestown, Elphin.

7. Descriptive Notes.—PROVINCES AND TOWNS.

Ulster occupies the entire N. and N.E. of Ireland, and is the province nearest to Scotland, from which, at one point (Fair Head) it is only 13 miles distant. It is the most populous, and by far the most important, of the four provinces into which the kingdom is divided; area 8555 square miles, or 5,475,000 acres; population 2,011,000. It is deeply indented by arms of the sea on the three sides exposed to the ocean, the principal indentations being Lough Strangford, Belfast Lough, Lough Foyle, Lough Swilly, and Donegal Bay. Each of these forms the estuary of a more or less extensive river-basin—viz., those of the Quoile, Lagan, Foyle, Swilly, and Erne, respectively.—Geological Character: Metamorphic rocks in the N., which is flanked with granite on the west side, and with an immense tract of trap on the east side; Lower Silurian in the S.E.; carboniferous limestone in the S.W.; and Old Red or Devonian in the centre. The shores are bold and rocky, with remarkable basaltic cliffs in the N. and E., the most celebrated of which is the Giant's Causeway, in the north of Antrim. Surface greatly diversified, but freer from bogs and plains than any of the other provinces of Ireland; mountainous in the W. and E. Mount Errigal attains an elevation of 2460 feet, and several summits exceed 2000 feet. Soil fertile, upwards of three-fifths under cultivation, and 214,000 acres under water. Ulster is the principal seat of the Irish linen-manufacture, and of other branches of industry. The annual value of the linen exported is estimated at £5,000,000 sterling, and there are 170,000 persons engaged in it. The principal mineral products are coal, iron, copper, lead, limestone, which are found chiefly in Cavan. The Protestant religion prevails, education is well attended to, and the people enjoy considerable comfort as compared with the other provinces.

TOWNS.—1. ANTRIM.—*Belfast*, the capital of Antrim, and the only really important town in the province, is situated at the head of Belfast Lough, and at the mouth of the river Lagan. It is the second city in Ireland in point of population, and greatly exceeds Dublin in manufacturing industry, especially in the linen and cotton manufacture. It has considerable foreign trade, and extensive intercourse with the west coast of Great Britain, especially with Liverpool and Glasgow. The educational institutions are the Royal Academic Institution, with 19 Professors and 400 students; and Queen's College, with 22 Professors, opened in 1849. *Carrickfergus*, with cotton and linen manufactories, and near it an extensive salt-mine discovered in 1852. *Lisburn*, a handsome and populous town; a canal from Lough Neagh here joins the Lagan. *Ballymena*, at the terminus of the Belfast and Ballymena Railway, is an active and thriving town.

2. DOWN.—*Downpatrick*, the capital, is one of the most ancient towns in Ireland; its holy wells are resorted to by Roman Catholic pilgrims. *Newton-Ards*, with manufactories of damask muslins. *Newry*, the largest town in the county, is a flourishing seaport, with considerable linen and cotton works. *Donaghadee*, 21 miles from Portpatrick in Scotland, is the regular station of the mail-packets to the west of Scotland.

3. ARMAGH.—*Armagh*, the county town, and the ecclesiastical capital of Ireland, contains both a Protestant and Roman Catholic cathedral, a public library of 14,000 volumes, an observatory with fine apparatus, and extensive inland trade in corn, linen, and yarn. *Lurgan* and *Portadown*, with manufactories of linen and cotton goods.

4. MONAGHAN.—*Monaghan*, on the Ulster Canal, which unites Loughs Neagh and Erne. *Clones*, on the same canal, with trade in brewing, tanning, and linen.

5. CAVAN.—*Cavan,* between the Erne and its affluent the Annalee, has some local traffic. *Cootehill* is the principal town in the county.

6. FERMANAGH.—*Enniskillen,* delightfully situated in an island in L. Erne, has two weekly newspapers, and a manufactory of cutlery.

7. DONEGAL.—*Lifford,* the smallest county town in Ireland, is a mere village. *Ballyshannon,* near the mouth of the Erne, with a salmon-fishery in the river.

8. LONDONDERRY.—*Londonderry,* with nearly 20,000 inhabitants; a walled city on the Foyle, famous for the siege so heroically sustained against the army of James II. in 1689; steam communication with Scotland and Liverpool, and railway with Enniskillen and Coleraine. *Coleraine* is one of the principal markets for the Ulster linen-manufactures.

9. TYRONE.—*Omagh,* a small town in the centre of the county, of respectable appearance, with trade in linen and corn. *Dungannon,* the ancient residence of the kings of Ulster, is a handsome town, with a brisk linen-trade, and an endowed college.

Leinster.—This province occupies the entire S.E. of Ireland; area, 7472 square miles, or 4,876,000 acres; population, 1,637,000. The shores are less indented than in Ulster, the principal inlets being Dundalk and Dublin Bays and Wexford Haven: the principal rivers are the Dee, Boyne, Liffey, Slaney, and Barrow: the basins of the Shannon and Suir also belong partially to this province.—G.C.: By far the largest portion is covered with mountain limestone, but there are considerable tracts of Lower Silurian along the east coast, enclosing a huge belt of granite, which extends in a S.W. direction from Dublin Bay to the junction of the Barrow and Nore. Surface generally level, but one mountain region in the E. and another in the W.; soil fertile and well cultivated, and producing more wheat than any other province. Possesses superior facilities for internal communication by means of its large rivers; but has fewer good harbours than any of the other provinces. At the time of the Anglo-Norman invasion the province was divided into two petty sovereignties—viz. those of Leinster and Meath: it is now divided into twelve counties:—

TOWNS.—10. LOUTH.—*Dundalk,* at the head of a bay of same name, has various manufactures and important fisheries. *Drogheda,* on the Boyne, one of the principal corn-markets of Ireland: its manufactures of cotton and linen are declining.

11. MEATH.—*Trim,* a small town on the Boyne; near it Dangan, the birthplace of the late Duke of Wellington. *Navan,* with corn- and paper-mills, and considerable exports of agricultural produce. *Kells* has manufactories of lace.

12. DUBLIN.—*Dublin,* the capital of Ireland and one of the finest cities of Europe, has a quarter of a million inhabitants, and numerous magnificent public buildings, splendid private mansions, and elegant streets and squares: Sackville Street, three-quarters of a mile long, and 120 feet wide, is without a rival in the United Kingdom. There are two Protestant cathedral churches—Christ's Church and St Patrick's, the latter distinguished for its numerous monuments; the Post-Office, Custom-House, Bank of Ireland (formerly the Parliament House), and the Surgeons' Hall, are all noble public edifices. Trinity College, a Protestant University founded in 1591 by Queen Elizabeth, is usually attended by

about 2000 students, has a library of 150,000 volumes, and a collegiate body consisting of a provost, 7 senior fellows, 18 junior fellows, 70 scholars, and 30 sizars: permanent income from landed estates £13,846, besides fees, which amount to £30,000 per annum. With the exception of the public buildings and some others, the city is principally built of brick: the older parts of the town have a dilapidated aspect, and are in striking contrast with the elegance of the newer portions. The export trade is fast increasing, but there are few important manufactures. *Kingstown*, formerly Dunleary, is the port of Dublin, with an excellent harbour and extensive commerce: it is the mail-packet station to Liverpool and Holyhead.

13. WICKLOW.—*Wicklow*, a resort of sea-bathers, exports copper-ore and corn. *Arklow* has important herring and oyster fisheries. *Bray* has manufactories of woollen and linen fabrics.

14. WEXFORD.—*Wexford*, a considerable town, with exports of cattle and dairy produce, has extensive quays and dockyards. *Enniscorthy*, a thriving inland town; near it is Vinegar Hill, where the Irish rebels were defeated in 1798. *New Ross*, a flourishing town, with considerable export trade in agricultural produce.

15. KILKENNY.—*Kilkenny*, a considerable town, the second in population in the province; the streets are paved with black marble, which is quarried in the vicinity; here is a grammar school, in which Swift, Congreve, and Berkeley received the early part of their education.

16. QUEEN'S COUNTY.—*Maryborough*, on a small affluent of the Barrow, consists for the most part of miserable cabins, with a few fine houses. *Portarlington*, partly in King's County, is the residence of an unusual number of gentry.

17. KING'S COUNTY.—*Tullamore*, the principal shipping station on the Grand Canal. *Birr*, a thriving town: here Lord Rosse has erected his monster telescope, which has resolved many *nebulæ* into innumerable distinct stars.

18. WEST MEATH.—*Mulingar*, on the Royal Canal which connects the Liffey and Shannon, is noted for its great cattle and wool markets. *Athlone*, the principal military quarters for the west of Ireland, has considerable local trade.

19. LONGFORD.—*Longford*, on the Camlin, and on a branch of the Royal Canal, is a military station, and a busy, thriving little town.

20. KILDARE.—*Athy*, on the Barrow, has considerable trade in corn, butter, and malt. *Kildare*, a small town, near which the celebrated "Curragh" races are held four times a-year. *Naas*, on a branch of the Grand Canal, a very ancient town, with considerable local trade. *Maynooth*, with a far-famed Romish college, subsidised by the British Government at an annual expense of £30,000: it accommodates 450 students, of whom 250 are maintained by the grant.

21. CARLOW.—*Carlow*, with a Roman Catholic cathedral and college, has considerable trade in agricultural produce.

Munster occupies the S.W. of Ireland, and is the largest of the four provinces; area, 9474 square miles, or 6,064,000 acres; population, 1,831,000. The coasts are very deeply indented on the west side by the estuary of the Shannon, by Dingle Bay, Kenmare River, and Bantry Bay. The principal river-basins are those of the Suir, which enters Waterford Harbour; the Blackwater; the Lee, which enters Cork Harbour; the Bandon, which enters Kinsale Harbour (all of which incline to the S.E.); and the Shannon basin in the N.W., only partially in this province. —G.C.: Mountain limestone and millstone-grit in the W., Devonian strata in the S., and Upper Silurian in S.W. Surface highly diversified; two ranges of mountains, the southernmost of which contains the loftiest summits in the kingdom, extend nearly across the province from E. to W., enclosing the basin of the Blackwater: the extensive plain of Tipperary, Limerick, and Cork, occupies a large portion of the surface. Soil various, two-thirds being arable, and a great portion under bog, which is easily reclaimed. Coal is found in Tipperary, Kerry, and Cork; but there are few minerals exported, though the harbours are excellent. In 1831, out of 376,000 families, 244,000 were employed in agriculture, and 62,000 in trades and manufactures, which are chiefly carried on around Cork and Limerick. The population belongs almost exclusively to the Romish Church, and is sunk in ignorance and poverty. At the time of the Anglo-Norman conquest, the province was divided into the two petty kingdoms of North and South Munster. It is now divided into six counties.

TOWNS.—22. WATERFORD.—*Waterford*, a large and thriving city on the right bank of the Suir, about nine miles above its entrance into the capacious harbour that bears its name. It has an extensive quay, with floating stages which rise and fall with the tide; and has a great foreign and coasting trade, the exports alone being valued at £2,000,000 annually. It is connected by railway with Dublin, Limerick, and Cork, and by steamers with Dublin, Liverpool, and Bristol. *Clonmell*, partly in Tipperary, a considerable town, with extensive manufactures, and a large export trade in agricultural produce to England. *Dungarvan*, with hake and herring fisheries, which constitute the main support of the town.

23. CORK.—*Cork*, a large and populous city, built on an island in the Lee. As regards size and population it is only exceeded by Dublin and Belfast. Five-sixths of the inhabitants are Roman Catholics. The principal manufactures are leather, iron, and metallic goods, glass, gloves, and paper. Shipbuilding is extensively carried on in the harbour, which is reckoned one of the finest in the world, and which is perfectly protected in all weathers. Cork is the seat of one of the recently-erected Queen's Colleges, and contains several other literary and scientific institutions. *Queenstown*, formerly *Cove of Cork*, derived its present name from the visit of Queen Victoria in 1849: it is situated on Cove Island and in Cork Harbour, and is the principal seaport of that city: it is protected by batteries and fortifications, and contains barracks and victualling stores. *Skibbereen*, a brisk thriving town on the Ilen. *Kinsale*, a fashionable watering-place, with extensive and valuable fisheries. *Bandon*, with a railway to Cork, has some woollen manufactories. *Youghal*, on the Blackwater, with valuable salmon-fisheries: here Sir Walter Raleigh first introduced the culture of the potato. *Fermoy*, with infantry barracks and flour-mills. *Mallow*, with a hot mineral-spring. *Kanturk* has some manufactures of serge.

24. KERRY.—*Tralee*, a considerable town on the Lee near its mouth, is the seat of a brisk trade in grain and flour: there is an ancient castle here which was once the seat of the Earls of Desmond. *Dingle*, on Dingle Bay: the houses here are of the quadrangular form, after the Spanish model. *Killarney*, on a lake of same name, famous for its enchanting scenery. *Cahirciveen*, opposite Valentia Island, which is the eastern extremity of the great submarine telegraph to America.

25. CLARE.—*Ennis*, with a Gothic abbey, which is reckoned the finest in Ireland, has quarries of fine black marble in the neighbourhood. *Kilrush*, a small trading and fishing town, exports turf to Limerick.

26. TIPPERARY.—*Tipperary*, on the Arra, an affluent of the Suir, and on the Waterford and Limerick Railway, is beautifully situated, and is a well-built and thriving town. *Carrick-on-Suir*, with a bridge of twenty arches over the river, and an export trade in corn and cotton. *Cashel*, near the Suir, once the capital of the kingdom of Munster, is an ancient archiepiscopal city, with a cathedral standing on the celebrated "Rock of Cashel," the largest and most remarkable ruin in Ireland. *Thurles*, on the Great Southern and Western Railway, with a Romish college and two Episcopal palaces. *Nenagh*, in the north of the county, a thriving town, with a good local trade.

27. LIMERICK.—*Limerick*, a large and populous city on the Shannon, at the head of its noble estuary, is a place of great antiquity, and the fourth largest city in Ireland; was a royal seat of the kings of Thomond before the conquest of Ireland; and capitulated to the troops of William III. in 1691; has railway communication with all parts of the kingdom; has great export and import trade, and considerable manufactures of beautiful lace. Here are a Romish cathedral, friaries, and convents; four semi-weekly newspapers. The customs in 1852 amounted to £155,000.

Connaught, the smallest, least populous, and most westerly of the Irish provinces, lies N. of Munster and W. of Leinster, from which it is separated by the Shannon; area, 6862 square miles, or 4,392,000 acres; population, 1,012,000. The west side is broken up into numerous peninsulas, the largest of which is Connemara, and is lined by a great many islands. The principal indentations are Galway, Clew, Blacksod, Killala, and Sligo Bays; and the chief river-basins are those of the Shannon (in part), Corrib, Moy, and Arrow. —G. C.: Principally mountain limestone; but a large tract of metamorphic and Silurian strata in the W., and extensive patches of Devonian in various parts. Surface mountainous in the W., and hilly in the N. and S., while the centre consists of an extensive level plain. Soil various, moderately fertile, full of peat-bogs, but nearly a half is arable. Minerals and manufactures unimportant; but coal is found in the Lough Allen district. The inhabitants belong for the most part to the native Irish or Celtic stock, retain their ancient language, adhere to the Romish religion, and are sunk in the deepest poverty and ignorance. Connaught was formerly one of the kingdoms of the Irish heptarchy, and remained unconquered long after the rest of Ireland had yielded to the English arms. It is now divided into five counties.

TOWNS.—28. GALWAY.—*Galway*, a pretty large town on the Corrib, and at the head of Galway Bay, may be regarded as the capital of Connaught, it being the only important town in the province. It is 105 miles west from Dublin, with which it is connected by the Midland Great Western Railway. It is not a manufacturing place, but has a considerable fishery, and a good retail trade. Galway is very ancient; was conquered by the Anglo-Normans in 1230; had a flourishing trade with Spain in the Middle Ages, and many of the houses are erected after the Spanish model. It is the seat of one of the Queen's Colleges, which was opened in 1849. *Tuam*, an Episcopal city, with two cathedrals, two Episcopal palaces, and a Romish college, named St Jarleth, has some manufactories of linen and canvass. *Ballinasloe* has a large annual fair, which lasts five days.

29. MAYO.—*Castlebar,* on the Castleton, a sub-tributary of the Moy, a small inland town, the head of a poor-law union, has some trade in linen. *Ballina,* on the Moy, partly in Sligo, with manufactures of snuff and coarse linen, a brisk trade in agricultural produce, and valuable salmon-fisheries. *Westport,* a thriving town on Clew Bay, with an active export trade.

30. SLIGO.—*Sligo,* a considerable town on the Garvogue, which flows from Lough Gill, has a good colonial and foreign trade. Three ships of the Spanish Armada were stranded here in 1588. *Ardnaree,* the larger part of Ballina, belongs to this county.

31. LEITRIM.—*Carrick-on-Shannon,* at the confluence of the Shannon and Boyle, is a very small town, with little trade.

32. ROSCOMMON.—*Roscommon,* on the Suck, a tributary of the Shannon, has some woollen manufactures, and an increasing corn-trade. *Boyle,* with a large corn and butter market, is the head of a poor-law union. *Elphin,* the birthplace of Oliver Goldsmith.

8. **Capes.**—Beginning at the extreme north, and proceeding eastward, the principal capes and headlands are the following:—Malin Head, in Donegal, the northernmost point of the mainland; Bangore Head and Fair Head, in Antrim;* Howth Head on the north side of Dublin Bay; Wicklow Head, in Wicklow; Carnsore Point, in Wexford; Cape Clear, on an island, the most southern point of Ireland; Mizen Head, in Cork, the most southern point of the mainland; Dunmore Head, in Kerry, the most westerly point of the mainland; Kerry Head and Loop Head, on either side of the estuary of the Shannon; Slyne Head, west of Galway; Achil Head, Urris Head, and Benwee Head, in Mayo; Rathlee Head and Knocklane Head, in Sligo; Rossan Point and Bloody Foreland, in Donegal.

9. **Islands.**—The islands are in general very small, and close to the mainland.† Following the same order as in the last paragraph, we have:—Rathlin Island, N. of Antrim; Copeland Island, N.E. of Down; Lambay and Ireland's Eye, E. of Dublin; Saltee Islands, S. of Wexford; Cove Island, in Cork Harbour; Cape Clear and Bear Islands, S.W. of Cork; Valentia‡ and Blasket Islands, W. of Kerry; Arran Isles, in Galway Bay; Garomna, and several others, S. of Galway; Innis Bofin, Innis Turk, Clare Islands, and

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* Fair Head is only 13 miles distant from the Mull of Cantyre, in Scotland. A little to the west of Bangore Head is the celebrated Giant's Causeway, a basaltic promontory projecting into the sea, resembling a pier, 700 feet in length, 350 feet in breadth, and 30 feet in height. It is separated by trap-dykes into three divisions, comprising in all about 40,000 polygonal columns, each consisting of several pieces, the joints of which are articulated with the greatest nicety.

† Altogether 5000 islands and rocks are enumerated as belonging to Ireland, of which 245 were found inhabited at the date of the last census.—Compare par. 1 of "General View of the British Isles."

‡ Valentia Island is the eastern terminus of the great submarine telegraph to Newfoundland and America.—*See* p. 205.

Achil Island, W. of Connaught; Arranmore and Tory Island, W. of Donegal.

10. **Bays and Estuaries.**—These are very numerous, especially in the N. and W., where they penetrate far into the land. On the coast of Ulster these inlets are termed *loughs*, a word of the same sound and signification as the *lochs* of the opposite coasts of Scotland. Beginning at the north, and following the coast-line eastwards, the following are the principal bays, &c.:—

Coast of Ulster.—Loughs Swilly, Foyle, Belfast, Strangford; Dundrum Bay, Carlingford Bay. *Coast of Leinster.*—Dundalk Bay, Dublin Bay, Wexford Harbour. *South Coast of Munster.*—Waterford Harbour, Dungarvan Harbour, Youghal Harbour, Cork Harbour, and Kinsale Harbour. *West Coast of Munster.*—Bantry Bay, Kenmare River, Dingle Bay, Tralee Bay, Estuary of the Shannon. *Coast of Connaught.*—Galway Bay, Clew Bay, Blacksod Bay, Killala Bay, Sligo Bay, and Donegal Bay, between Connaught and Ulster.

11. **Mountain System.**—The Irish mountains form an immense circular ring along the coast, enclosing the great central basin of the kingdom. This plain extends from Dublin to Galway, and from the shores of Lough Neagh to Waterford: its highest elevation is about 320 feet; it comprises a large tract of bog-land, and is traversed by only a few low ranges of hills. The mountain-ranges separating the central plain from the ocean are not continuous, but broken up into a number of isolated masses, none of which attains to any great elevation; Carran Tual, in Macgillicuddy Reeks, County Kerry, the culminating-point of Ireland, is 3404 feet high. Beginning at the S.E. corner of Ulster, and proceeding N. and W., the following are the principal ranges:—

Mourne Mountains, in the south of Down, and between the Newry and Lagan; highest summits are—Slieve-Donard, 2796; and Mount Eagle, 2085 feet.

Benocum Mountains, in Antrim, separating the basins of the Lagan and Bann, and extending from Belfast to Fair Head; Mount Trostan, 1810; Mount Devis, 1568 feet.

Carntogher Mountains, in Londonderry, between the Bann and the Foyle; Mount Sawell, 2236 feet.

Mountains of Donegal, between the Foyle and Atlantic; Mount Errigal, 2236 feet.

Nephin-Beg Mountains, in Mayo, between the basin of the Moy and west coast; Mount Nephin, 2646 feet.

Mountains of Connemara, south of Clew Bay, and between the basin of the Corrib and west coast; Mweelree, 2679; Croagh Patrick, 2530; Twelve Pins, 2400 feet.

Mountains of Clare, between Galway Bay and Estuary of the Shannon; Mount Callan, Slieve-Boughty.

Mount Brandon, 3120 feet—the second-highest mountain in Ireland—between basin of Shannon and Dingle Bay.

Macgillicuddy Reeks, in Kerry, between Dingle Bay and Kenmare river; Carran Tual, W. of Lake Killarney—the highest mountain in Ireland—3404 feet; Mangerton, S.E. of Lake Killarney, 2550 feet.

The *Muskerry, Bogragh, and Neagh Mountains*, in Cork, between the basins of the Blackwater and the Lee.

Mountains of Tipperary and Waterford, between the basins of the Blackwater and the Suir; Galty Mountains, 3000; Knockmeledoun Mountains, 2700; Commaragh, 2598 feet.

Blackstairs Mountains, in Wexford, and between the basins of the Barrow and the Slaney.

Mountains of Wicklow, between the Slaney and Liffey; Lugnaquilla, 3039; Kippur, 2473 feet.

Slieve-Bloom Mountains, in the interior of the Great Plain, separate the basin of the Shannon from that of the Barrow and Suir.

The line of perpetual congelation in the latitude of Carran Tual is about 6000 feet high. Hence, though Mangerton were piled a-top of the loftiest mountain in Ireland, it would not be capped with snow all the year round.

12. **Principal River-Basins.**—The principal axis of Ireland extends in a N.E. direction from Mizen Head, in Cork, to Fair Head, in Antrim (see par. 2). The twelve principal river-basins are equally divided by this line, six of them inclining from it in a general westerly direction towards the Atlantic, and the remaining six in a general easterly direction towards the Irish Sea and the openings leading into it. The following table contains these twelve basins—the first six being those that incline towards the Atlantic, and the remainder those that incline in the opposite direction. The twelve basins contain twenty-six out of the thirty-two county towns, and occupy about 5⅔ of the entire surface.

Basin.	Length in Eng. Miles.	Area in Square Miles.	County Towns.
Shannon, .	224	7000	Limerick, Carrick-on-Suir, Ennis Mulingar, Tullamore, Roscommon Longford.
Corrib, .	50	1000?	Galway.
Moy, . .	45	750?	Castlebar.
Erne, . .	60	2500?	Enniskillen, Cavan.
Foyle, . .	80	1100	Londonderry, Lifford, Omagh.
Bann, . .	90	2300	Armagh, Monaghan.
Boyne, . .	60	1000	Trim.
Liffey, . .	50	750	DUBLIN.
Slaney, .	60	700	Wexford.
Barrow and Suir, .	100 100	3400	Carlow, Athy, Maryborough, Kilkenny, Waterford, Tipperary.
Blackwater,	80	1000	No capital.
Lee, . .	50	600	Cork.

The six county towns not included within these twelve river-basins are Belfast, Dundalk, Downpatrick, Sligo, Tralee, and Wicklow.

The five largest basins are the Shannon, Erne, Foyle, Bann, Barrow, and Suir; they contain twenty county towns and 16,300 square miles, or one-half of the entire surface.—(For the watershed, dividing the different river-basins from each other, see under "Mountains," par. 11.)

13. **Tabular View of Rivers and Towns.**—The arrangement adopted in the following table is the same as in the corresponding sections treating of England and Scotland: we begin with the river on which the capital stands, and proceed northwards along the coast—that being the direction followed in the river-system of Great Britain. Large towns are printed in Roman letters, and denote here such as contain 2500 inhabitants and upwards; small towns, or those printed in *Italics*, denote those containing not less than 750 inhabitants; and county towns are in SMALL CAPITALS. Ninety rivers are given in the table, and of these thirty enter the ocean directly, the other sixty being their tributaries; and 230 towns, only one hundred of which have a population amounting to 2500, all the others ranging between that number and 750.

Basins inclined to the Irish Sea.

Rivers.	*Towns.*
Liffey and Dublin Bay,	DUBLIN, Kingstown, *Leixlip*, *Celbridge*, Naas, *Kildare*, n.
Rye, *l*	*Maynooth*, *Kilcock*.
Co. of Dublin,	*Howth*, *Swords*, *Rush*, *Balbriggan*.
Boyne,	Drogheda, Navan, TRIM, *Edinderry*.
Blackwater, *l*	Navan, Kells.
Moynalty, *l*	*Bailieborough*.
Athboy, *l*	*Athboy*.
Dee,	Ardee.
Glyde, *l*	Carrickmacross, *Kingscourt*.
Fane,	*Louth*, *Castle Blaney*.
Castleton,	DUNDALK.
Carlingford Bay and River Newry,	*Carlingford*, *Rosstrevor*, *Warren Point*, Newry, *Rathfryland*.
Co. of Down,	*Castle Welland*, *Killough*, *Ardglass*, Donaghadee.
Lough Strangford & River Quoile,	*Portaferry*, Newtown-Ards, *Killyleagh*, DOWNPATRICK, *Crossgar*, *Ballynahinch*.
Lough Belfast and River Lagan,	Bangor, Carrickfergus, BELFAST, Lisburn, *Hillsborough*, *Dromore*.
Lough Larne,	Larne.
Glenarm Bay,	*Glenarm*.

Basins inclined to the Atlantic.

Ballycastle Bay,	*Ballycastle*.
Bush,	(Giant's Causeway) *Bushmills*.

Basins inclined to the Atlantic (continued.)

Rivers.	*Towns.*
Bann,	Coleraine, Ballymoney, n., *Kilrea*, *Portglenone*, Antrim, Lurgan, n., Portadown, *Tanderagee*, Banbridge.
Moyola, *l*	*Magherafelt*, *Maghera.*
Main,	*Randalstown.*
Braid, *l*	Ballymena.
Ballinderry, *l*	Cookstown.
Blackwater, *l*	Dungannon, n., *Aughnacloy.*
Callen,	ARMAGH, *Keady*, n.
Ulster Canal,	MONAGHAN.
Foyle (Lough Foyle),	LONDONDERRY, LIFFORD, Strabane.
Roe,	Newtown-Limavady, *Dungiven.*
Deel, *l*	*Raphoe.*
Mourne,	Strabane, *Newtown-Stewart*, OMAGH, *Fintona*, n.
Swilly, Lough & River,	*Buncrana*, *Rathmelton*, *Letterkenny.*
Donegal Bay and River Erne,	*Killybegs*, *Donegal*, Ballyshannon, Irvingstown, n., ENNISKILLEN, *Belturbet*, *Killeshandra*, CAVAN, n.
Wattle,	*Clones*, n.
Annalee,	*Cootehill*, n.
Garvogue and Bonnet,	SLIGO, *Manor-Hamilton.*
Moy,	*Killala*, Ballina.
Deel, *l*	*Crossmolina.*
Castlebar,	CASTLEBAR.
Blacksod Bay,	*Belmullet.*
Clew Bay,	*Newport*, Westport.
W. Co. of Galway,	*Cliffden.*
Corrib (Galway Bay),	GALWAY, *Oughterard.*
Clare, *l*	Tuam, *Dunmore.*
Owenduff, *l*	*Headford.*
Robe, *l*	*Ballinrobe.*
Claren,	*Claren Bridge*, *Athenry.*
Cooter (underground),	Gort, Loughrea.
Shannon (Lough Allen),	Kilrush, *Tarbert*, LIMERICK, *Killaloe*, *Borrisocane*, *Portumna*, *Banagher*, Athlone, CARRICK-on-Shannon.
Fergus,	*Clare*, ENNIS.
Deel, *l*	*Askeaton*, *Rathkeale*, Newcastle.
Maig and Looba, *l*	*Croom*, Charleville, *Kilmallock*, *Kilfinnan.*
Star,	Bruff.
Ougarnee,	*Six-mile Bridge.*
Nenagh, *l*	Nenagh.
Lower Brusna, *l*	Birr, Roscrea.
Brusna, *l*	*Clara*, MULLINGAR.
Cloddagh, *l*	TULLAMORE.
Suck,	Ballinasloe, *Aghrim*, n., ROSCOMMON, *Castle-*
Inny, *l*	*Ballymahon*, *Edgeworthstone*, n., *Granard*, n.
Camlin, *l*	LONGFORD.

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
Bodarg,	*Strokestown*, n., *Elphin*.
Boyle (Lough Gara),	CARRICK-on-Shannon, Boyle.
Feale,	*Listowel*, *Abbeyfeale*.
Tralee Bay,	TRALEE.
Dingle Bay and Main River,	Dingle, *Cahirciveen*, *Castlemain*, *Castle Island*.
Lane, *l*	Killarney.
Kenmare River,	*Kenmare*.
Bantry Bay,	Bantry.

Basins inclined to the Irish Sea (continued).

Ilen,	Skibbereen.
Ross Bay,	*Rosscarberry*.
Clonakilty Bay,	Clonakilty.
Bandon,	Kinsale, Bandon, *Dunmanway*.
Cork Harbour and River Lee,	Queenstown, *Cloyne*, n., Middleton, n., West Passage, CORK, Macroom, n.
Sullane, *l*	Macroom.
Blackwater,	Youghal, *Cappoquin*, *Lismore*, Fermoy, Mallow, *Millstreet*.
Bride,	*Tallow*, *Rathcormack*.
Funcheon, *l*	*Kilworth*, Mitchelstown.
Awbeg, *l*	Doneraile, *Buttevant*.
Allow, *l*	Kanturk.
Dungarvan Bay,	Dungarvan.
Tramore Bay,	*Tramore*.
Suir,	WATERFORD, Carrick-on-Suir, Clonmell, Cahir, Cashel, Thurles.
Honor, *l*	*Killenaule*, n.
Tar,	*Clogheen*.
Arra,	TIPPERARY.
Barrow,	New Ross, *Graigue*, *Leighton Bridge*, CARLOW, ATHY, *Monastereven*, *Kildare*, n., Portarlington, MARYBOROUGH, Mount Mellick.
Nore,	*Thomastown*, KILKENNY, *Freshford*, *Ballyragget*, *Durow*, *Ballynakill*, *Abbeyleix*, *Mountrath*, *Borris-in-Ossory*.
King's River,	*Callan*, *Urlingford*.
Dinan, *l*	*Castle Comer*.
Strad,	*Stradbally*.
Figale, *l*	*Monastereven*, *Philipstown*.
Slaney,	WEXFORD, *Taghmon*, n., Enniscorthy, *Newtown-Barry*, Tullow, *Baltinglass*.
Bann, *l*	Govey.
Derry, *l*	*Carnew*.
Avoca,	Arklow, *Rathdrum*.
Vartry,	WICKLOW.
Bray,	Bray.

14. **Lakes.**—The Irish lakes or *loughs* are numerous, and some of them very large. Lough Neagh, in Ulster, is the largest lake in the British Isles: it is 17 miles long, 10 broad, and has an area of 98,000 acres, or 153 square miles: its waters are celebrated for their petrifying quality. The other largest lakes are, Corrib, with an area of 43,000 acres; Erne, 37,000 acres; Derg, 29,500 acres; Ree, 26,000 acres; Mask, 25,000 acres. The total area of all the Irish lakes is estimated at 984 square miles, or 630,000 English acres. All the important lakes are found in the principal river-basins enumerated in par. 12. Following the order there given, we find in the basin of the

Shannon—*Loughs Derg, Ree, Boffin, Corry,* and *Allen* in the line of the main river; *Loughs Ennel* and *Owel* on the Brusna; *Loughs Dereveragh* and *Sheelin* on the Inny; and *Loughs Key* and *Gara* on the Boyle.
Corrib—*Loughs Corrib* and *Mask.*
Moy—*Loughs Conn* and *Cullin.*
Erne—*Loughs Erne, Oughter,* and *Gounagh.*
Foyle—*Lough Derg,* containing St Patrick's Purgatory on an island.
Bann—*Lough Neagh,* largest in the United Kingdom.
Boyne—*Lough Ramor.*
Dingle and Main Basin—*Lakes of Killarney,* in Kerry, drained by the Lane, and celebrated for their romantic scenery, being surrounded by the loftiest mountains in Ireland.

15. **Internal Communication.**—Owing to the absence of mountain chains in the interior, and the many deep indentations of the coast, Ireland possesses great natural facilities for carrying on her internal communication; but until very recently, little has been done in opening up the country by the construction of the highways of commerce.

RAILWAYS.—In January 1859 there were twenty main lines of railway, embracing 1188 miles open for traffic; and the total receipts for passengers and goods for the year then ending were £1,175,721. The railway system is still very far from being complete. Dublin is the centre of the greater part of them; and with one or two solitary exceptions, they all run along the east coast. The following are the principal lines:—

Dublin to Belfast, 113 miles, passing Drogheda and Dundalk, and consisting of several main lines. The principal branches leading from it are, Drogheda to Kells, 27 miles; Dundalk to Enniskillen, 45 miles; Portadown to Armagh, 11 miles.

Dublin to Galway, 126½ miles, per the *Midland Great Western,* passing by Mullingar and Athlone.

Dublin to Cork, per *Great Southern and Western,* 164¾ miles, passing Kildare, Maryborough, Thurles, and Mallow; with branches from Kildare to Kilkenny, 51 miles; and from Mallow to Killarney, 41 miles.

Waterford to Limerick, per *Waterford and Limerick Railway,* 77 miles.

Waterford to Kilkenny, per *Waterford and Kilkenny Railway,* 31 miles.

Cork and Bandon Railway, 20 miles.

Cork, Blackrock, and Passage Railway, 6½ miles.

Belfast to Coleraine, by Carrickfergus, Antrim, Ballymena, and Ballymoney, 85 miles.

Belfast to Downpatrick, 24½ miles.

Londonderry to Coleraine, 33 miles.
Londonderry to Enniskillen, by Omagh, 60 miles.

NAVIGABLE RIVERS.—The Shannon is navigable from the sea to Lough Allen, a distance of 214 miles; the Bandon, 15; the Blackwater to Cappoquin, 12 miles; the Suir to Clonmell, 40 miles; the Barrow to Athy, 60; the Nore to Thomastown, 28; the Slaney to Enniscorthy, 15; the Boyne to Navan, 25; the Lagan has been made navigable to Lisburn; the Bann to Coleraine, 5 miles; the Foyle to Strabane, 20; Erne to Ballyshannon, 5 miles.

CANALS.—The Grand Canal, from Dublin to Banagher on the Shannon, connects the Irish Sea with the Atlantic, 87 miles; a branch connects this canal with the Barrow at Athy, 26 miles: its other branches have an aggregate length of 29 miles.

Royal Canal, from Dublin to a point in the Shannon a little above Lough Rea, 83 miles.

Newry Canal, unites the river Newry with the Upper Bann, thus connecting Carlingford Bay with Lough Neagh, 12 miles.

Lagan Canal, from Belfast to Lough Neagh, 20 miles.

Ulster Canal, from Charlemont on the Blackwater, a feeder of the Upper Bann, to Lough Erne, by Monaghan and Clones, 46 miles.

Boyne Canal, from Drogheda to Navan and Trim.

ELECTRIC TELEGRAPH.—Two lines of submarine telegraph connect Ireland with Great Britain—one from Dublin to Holyhead, 64 miles, and the other from Belfast to Stranraer, in Wigtownshire. The electric wires are also laid in connection with all the principal railway lines. On the 5th August 1858, the great submarine telegraph, connecting the Old World with the New, was completed. The eastern terminus of the telegraph is in Valentia Harbour, county Kerry, and the western at Trinity Bay, Newfoundland. It continued in working order, however, for only a few months, and is now abandoned.

16. **National Character.**—The native Irish belong to the Celtic race, and are characterised by all the peculiarities which distinguish it from the other branches of the Caucasian family, some of which they exhibit in an extreme degree. They are remarkable for quickness and intelligence; but the brilliancy of their imagination, and their unrivalled wit, are more striking than their depth of thought or power of patient investigation. They are unequalled for natural eloquence and a strong predilection for humour. Fun and joke fly forth from a true Irishman as spontaneously as the sparks flow upwards. Their wit is so peculiar and *sui generis*, that it is quite inimitable by all save the natives of the Emerald Isle. They are singularly warm-hearted and hospitable, and, when well educated and refined, form the most agreeable associates; but a large proportion of the community is immersed in poverty, ignorance, and superstition. Their prevailing vices are rashness, improvidence, and a disposition to riotous excitement; and when under the influence of spirituous liquors, they are frequently regardless of human life. They have always manifested a strong aversion to English rule, and have had too many causes for evincing a spirit of insubordination: but a better day is beginning to dawn over this unfortunate, though beautiful country.

17. **Literature.**—Ireland could boast of a written literature long before the sister island. Not a few Irish MSS. still extant are supposed to have been written as early as the sixth century. The famous Psalter of Cashel, though not compiled till the ninth century, contains many bardic compositions of a much older date; and the same remark holds true in regard to the valuable collection of ancient Irish records made by Tighernach and other annalists in the eleventh and twelfth centuries. These were printed and published by the Rev. Charles O'Connor in 1814-26, both in the original and with a Latin translation. The largest known collections of Irish MSS. are those in the library of Trinity College, Dublin, and those formerly in that of the Duke of Buckingham, at Stowe. Of the few works that have appeared in Irish, in recent times, are Keating's *Chronological History of Ireland*, and the translation of the Bible, executed in 1681. As the Irish language was rarely studied by scholars of other countries, learned Irishmen generally wrote in the Latin tongue in early times, and in English at a subsequent period. Among those who wrote in Latin may be mentioned the heretic Celestius, a disciple of Pelagius in the fourth century; St Patrick, the national apostle, and Sedulius the poet, in the fifth; St Columban in the seventh; Alcuin in the eighth; Donatus and Joannes Scotus Erigena in the ninth.

In modern times, the most distinguished names in Irish *Literature* are the following: Usher, Hutcheson, Berkeley, Sterne, Swift, Sheridan, Goldsmith, Burke, Grattan, Moore, Dr Adam Clarke, Sir Hans Sloane, W. B. Kirwan, Richard Kirwin, Carleton, Lever; and in *Travels*, Captains Maclure and M'Clintock.

SPAIN AND PORTUGAL.

1. **Position and Boundaries.**—Spain and Portugal, otherwise called the Iberian or Spanish Peninsula, occupies the extreme S.W. corner of Europe. It is bounded on the N. by the Pyrenees and the Bay of Biscay, which separate it from France; on the W. by the Atlantic; and on the S. and E. partly by the Atlantic and partly by the Mediterranean and Strait of Gibraltar, which separate it from Africa. The Peninsula lies between the parallels of 36° 1′ and 43° 45′ N., and between the meridians of 9° 32′ W. and 3° 20′ E.; thus

occupying 7¾° of latitude and nearly 13° of longitude. The parallel of 40°, which passes through the centre, proceeds eastward through the centre of the island of Sardinia, the S. of Italy, of Turkey, of Georgia, and of the Caspian Sea, and through the cities Bokhara and Pekin, and westward through the capitals of Philadelphia, Ohio, and Utah; and the central meridian, which is nearly that of Madrid, proceeds S. through the Ivory Coast, and 2° E. of St Helena, and N. through Wales, Edinburgh, and Dunnet Head.

2. **Form and Dimensions.**—Except for a considerable prolongation in the extreme N.E., the form of the Peninsula is nearly a square, whose longest diagonal from Cape St Vincent to Cape Creuse measures 650 miles; and the shortest, from Cape Ortegal to Cape de Gata, 525 miles. The extreme points are—Cape Roca, near Lisbon, the most westerly point of the Continent, and Tarifa Point, near Gibraltar, the most southerly; Cape Ortegal in Galicia and Cape Creuse in Catalonia are the extreme N. and E. points.

3. **Coast Line.**—Surrounded by the ocean on all sides except the N.E., the sea margin is necessarily large; but the ocean nowhere penetrates the land very deeply, and there are extensive tracts in the interior at a great distance from the sea. The entire coast-line is estimated at 2300 miles, of which 1800 belong to Spain and 500 to Portugal; being 1 mile of coast to each 95 miles of surface—a ratio greatly inferior to that of the other European peninsulas, all of which are deeply indented by the sea.

4. **Area.**—The area of the Peninsula is 212,223 square miles, or a little more than the area of France; 176,955 miles belong to Spain, and 35,268 to Portugal. The area of the continental portion of Spain is thus double that of the mainland of Great Britain, while Portugal is a little larger than Ireland. Including the Balearic and Canary Isles, the area of Spain is 182,708 square miles; and that of Portugal, including the Azores, Madeira, and the Cape Verd Islands, 38,000 square miles.

5. **Population.**—In May 1857 the total population of Spain amounted to 16,301,851, of which less than half a million belonged to the islands. The population of Portugal, in 1854, amounted to 3,929,512, of which 430,000 belonged to Madeira, the Azores, and Cape Verd Islands. Hence the entire population of the Peninsula does not exceed the estimated population of England and Wales in 1857, though the area is more than four times greater. In the beginning of the fourteenth century the population of the Peninsula was greatly denser than at present, that of Spain alone having been estimated at nearly 22,000,000, which in the four subsequent centuries declined to little more than 5,000,000. It is now again advancing, though very slowly. In the first half of the present century it increased at the rate of 40 per cent, the population of 1803 having been estimated at 10,351,000. The numerous wars in which Spain has been engaged, the loss of her colonies and commerce, the

want of water in the interior, and, above all, the blighting agency of her religion, account in a great measure for the stationary and frequently retrograde condition of the population.

6. **Political Divisions.**—Previously to 1833, Spain was divided into fifteen, or, including Granada, into sixteen provinces, many of which were called kingdoms. These were then subdivided into forty-nine new provinces (including the Balearic Isles and the Canaries), which in general bear the names of their respective capitals. The three Basque provinces, however, and Navarra, retain their former names. The following is a list of the old provinces, with their capitals, showing the new provinces into which they have been partitioned :—

Old Provinces.	Capitals.	New Provinces.
Guipuzcoa	Tolosa	Guipuzcoa.
Biscaya	Bilbao	Biscaya.
Alava	Vitoria	Alava.
Asturias	Oviedo	Oviedo.
Galicia	Santiago de Compostella	Lugo, Coruña, Pontevedra, Orense.
Leon	Leon	Leon, Zamora, Salamanca.
Estremadura	Badajos	Caceres, Badajos.
Andalucia	Seville	Sevilla, Cordova, Jaen, Huelva, Cadiz.
Granada	Granada	Granada, Almeira, Malaga.
Murcia	Murcia	Murcia, Albacete.
Valencia	Valencia	Alicante, Valencia, Castellon-de-la-Plana.
Catalonia	Barcelona	Tarragona, Barcelona, Gerona, Lerida.
Aragon	Zaragoza	Huesca, Zaragoza, Teruel.
Navarra	Pamplona	Navarra.
Old Castile	Burgôs	Santander, Logrono, Burgos, Palencia, Valladolid, Soria, Segovia, Avila.
New Castile & La Mancha	Madrid	Madrid, Guadalaxara, Cuença, Toledo, Ciudad Real.

The forty-seven new provinces are most conveniently arranged as follows :—

Seven north-western provinces, fronting the Bay of Biscay.

Seven western, embracing Leon, Estremadura, and part of Galicia.

Eight southern, embracing Andalucia and Granada.

Seven eastern, comprising Murcia, Valencia, and a part of Catalonia.

Six north-eastern, containing the remainder of Catalonia, Aragon, and Navarra.

Twelve central, embracing Old and New Castile, with La Mancha.

SEVEN NORTH-WESTERN PROVINCES.

Guipuzcoa.*—TOLOSA 7 (Orria), San Sebastian 19 (Urumea).

Towns between 5000 and 10,000 Inhabitants.—Fuenterrabia, Oñate.

Biscaya.—BILBAO 15 (Nervion).

Alava.—VITORIA 12 (Zadorra, an affluent of the Ebro).

Santander.—SANTANDER 19 (Miera).

Oviedo.—OVIEDO 10 (Ovia).

Gijon, Aviles.

Lugo.—LUGO 7 (Minho).

Mondonedo.

Coruña.—CORUÑA 19 (Mero), Ferrol 16 (W. coast), Santiago de Compostella 29 (Sar).

Padron, Betanzos.

SEVEN WESTERN PROVINCES.

Pontevedra.—PONTEVEDRA 5 (Lerey).

Vigo, Tuy.

Orense.—ORENSE 5 (Minho).

Leon.—LEON 6 (Bernesga).

Astorga.

Zamora.—ZAMORA 10 (Douro), Benevente 12 (Esla).

Toro-Arbucal.

Salamanca.—SALAMANCA 15 (Tormes).

Ciudad Rodrigo, Bejar.

Caceres.—CACERES 12 (Caceres).

Garrobillas, Placentia, Truxillo, Montanches, Alcantara.

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* The following rules will materially assist in pronouncing Spanish words :—
ce, *ci*=*th* in thin : as Caceres, Ciudad (*Câ'the-res*, *Thì-û'-dad*).
ch=*tch*, or *ch* in church ; never *sh*, as in Portuguese and French.
d, between two vowels=*th* in this : thus Mondonedo (*Mon-do-netho*).
g, *gh*, are aspirated=*y* in yes : thus Gallego (*Galleyo*).
g, before *e* and *i*=Spanish *j* : as Genil (*He-nil*).
h, initial is silent : as Hinares (*Inares*).
j, and *x*, strong guttural sounds=*ch* in the Scotch and German, or χ in Greek : as Xucar or Jucar, pronounced *Hucar*, with the *h* very strong.
ll=*ll* in French, *gl* in Italian, or *lli* in English *brilliant* : thus Llobrogat, Llerona.
ñ, called *n con tilde*=Italian *gn*, French *gne*, or English *ni* in Spaniard : as Coruña (*Cor-un'ya*).
que, *qui*=English *kee* : as in Guadal*qui*vir (*Gua-dal-ki-vir'*).
r has a strong rolling sound : as Xarama (*Char-râ'ma*).
[illegible]=English *s* in chase ; never like English *z*.
th=English *t* : as Thomar (*To'mar*).
z, as *th* in thin : thus, Zaragoza (*Tha-ra-go'tha*).
Vowels : *a*=*a* in father, never like *a* in make ; *i* and *y*=*ee*, or *i* in machine ; *u*=Italian *u*, or English *u* in rule ; *au* like *ou* in our ; *ay* and *ai*=*i* in pine : as Daimiel, also spelled Daymiel (*Dī'mi-el* ;) *ou*=*ow* in now.

Badajos.—BADAJOS 12, Don Benito 15, Villanueva de Serena 10 (Guadiana).

Olivenza, Xeres de los Caballeros, Albuquerque, Villafranca, Llerena, Cabeza del Buey, Castuera, Fregenal de la Sierra.

EIGHT SOUTHERN PROVINCES.

Sevilla.—SEVILLA 152 (Guadalquivir), Utrera 12 n. (Salado), Moron de la Frontera 9 (Guadairo), Carmona 15, Marchena 13 (Carbones), Osuna 17 n. (Madre Vieja), Ecija 24 (Genil or Xenil).

Lebrija, Constantina, Cazalla, Alcala, Campana, Fuentes, Estepa.

Cordova.—CORDOVA 160, Montoro 10 (Guadalquivir), Montilla 13 n., Cabra 12, Lucena 17 n. (Cabra), Baena n. 13 (Guadajos), Priezo 14 (Salado, *affl.* Genil).

Palma, Bujalence, Rambla, Villanueva, Hinojosa, Pozoblanco, Castro del Real, Espeja, Fernan Nuñez, Fuente Genil.

Jaen.—JAEN 17 (Jaen, *affl.* Guadalquivir), Baeza 11, Andujar 10, Ubeda 14 (Guadalquivir), Alcala la Real 12 (Guadajos), Martos 11 (Salado).

Cazorla, Linares, Alcandete, Torre Don-Gimeno, Porcunna.

Huelva.—HUELVA 7 (Odiel).

Valverde, Moguer, Palos, Ayamonte.

Cadiz.—CADIZ 72, San Fernando 10 (Isle of Leon), San Lucar 16 (Guadalquivir), Puerto es Maria 18, Xeres de la Frontera 33, Arcos 11 (Guadalete), Chiclana 21, Medina-Sidonia 11 (Lerio), Algeciras 11 (Strait of Gibraltar).

Rota, Olvera, Ubrique, Vejer de la Frontera, Alcala de los Gazules, Tarifa, San Roque, Gimena, Grazalema.

Malaga.—MALAGA 113, Antequera 17 (Guadaljorce), Velez Malaga 16 (Velez), Ronda 16 (Guadiaro).

Estepona, Marbella, Archidona, Alora, Alhaurin, Coin, Monda, Colmenar.

Granada.—GRANADA 100, Loja 15 (Genil), Motril 12 (Guadalfeo), Baza 11 n. (Barbata, *affl.* Guadalquivir).

Montefrio, Alhama, Almuñecar, Adra, Huescar, Puebla.

Almeria.—ALMERIA 18 (Almeria), Cueva de Vera 10, Huercalovera 12 (Almanzora), Velez Rubio 12 (Velez), Berja 10 (Adra).

Nijar, Gergal, Dalias, Mojacar, Vera, Seron, Velez Blanco, Oria.

SEVEN EASTERN PROVINCES.

Murcia.—MURCIA 109, Cieza 10 (Segura), Lorca 40 (Sangonera), Caravaca 10, Cehigan 10 (Caravaca), Cartagena 33 (S. coast).

Yecla, Jumilla, Mula, Calasparra, Alhama, Fuente Alamo, Totana, Almazarron, Bullas, Moratello.

Albacete.—ALBACETE 11 n., Chinchilla 12 n. (Guadarmina, *affl.* Guadalquivir), Hellin 10 (Mundo), Peñas de San Pedro 10 (Madera).

Alcaraz, Bonillo, Almanza, Tarazona, Tobarra, Caudete, Yeste.

Alicante.—ALICANTE 19 (E. coast), Orihuela 18 (Segura), Elche 18 (Elche), Alcoy 27 (Alcoy).

Villajoyosa, Aspe, Novela, Monovar, Villena, Gandia, Concentaina, Crevillente.

Valencia.—VALENCIA 145 (Guadalaviar), Alcira 13 (Jucar), San Felipe de Xativa 13 (Albayda).

Liria, Cullera, Sueca, Ayora, Carcajente, Onteniente, Enquera, Murviedro, Torrente.

Castellon-de-la-Plana. — CASTELLON-DE-LA-PLANA 17 (Mijares), Vinarosa 11 (Cenia).

Segorbe, Villa-Real, Alcora, Benicarlo, Burriano, Morella.

Tarragona.—TARRAGONA 13, Reus 25 n., Valls 11 (Francoli), Tortosa 26 (Ebro).

Barcelona.—BARCELONA 252 (Besos), Igualada 10 (Noya), Manresa 13 (Llobrogat), Vich 10 (Ter), Villanueva 10 (Foix), Mataro 13 (coast).

Tarrasa, Villafranca.

SIX NORTH-EASTERN PROVINCES.

Gerona.—GERONA 8 (Ter), Olot 12 (Fluvia).

Blanes, S. Feliu de Guixols, Figueras.

Lerida.—LERIDA 17 (Segre).

Cervera.

Huesca.—HUESCA 9 (Isuela).

Fraga, Barbastro.

Zaragoza.—ZARAGOZA 82 (Ebro).

Caspe, Tarazona, Calatayud.

Teruel.—TERUEL 7 (Guadalaviar).

Alcañiz.

Navarra.—PAMPLONA 11 (Agra).

Tudela, Estella, Sanguesa.

TWELVE CENTRAL PROVINCES.

Burgos.—BURGOS 16 (Arlanzon, *affl.* Duro).

Logroño.—LOGROÑO 7 (Ebro).

Calahorra, Haro.

Palencia.—PALENCIA 11 (Carrion, *affl.* Pisuerga).

Valladolid.—VALLADOLID 21 (Pisuerga).

Medina de Rio Seco.

Soria.—SORIA 3 (Douro).

Segovia.—SEGOVIA 13 (Eresma, *affl.* Douro).

Avila.—AVILA 5 (Adaja, *affl.* Douro).

Madrid.—MADRID 302 (Manzanares).

Alcala, Chinchon, Colmenar.

Guadalaxara.—GUADALAXARA 5, Siguenza 5 (Henares).

Cuença.—CUENÇA 6 (Xucar), Requena 11, Utiel 6 (Magro).

Toledo.—TOLEDO 15 (Tagus).

Talavera, Madridejos, Quintanar, Ocaña.

Ciudad Real.—CIUDAD REAL 8 n. (Guadiana), Almagro 13 n., Valdepeñas 10 (Jabalon), Daimiel 12 (Azur).

Manzanares, Solana, Almodovar, Villanueva de los Infantes, Alcazar, Herencia, Almaden.

TWO INSULAR PROVINCES.

Baleares.—PALMA 40, Manasor 10, Soller 7 (Majorca), Port-Mahon 13, Ciudadela 8 (Minorca), Iviza 6 (Iviza).

Canaries.—SANTA CRUZ 9, Laguna 7, Orotava 8 (Island Teneriffe), Las Palmas 17 (Grand Canary).

PORTUGAL formerly consisted of six, but latterly of eight provinces (besides the Azores and the Madeira group), and these are subdivided for administrative purposes into twenty-six *comarcas* or shires.

Minho.*—BRAGA 17 (Ria d'Este).

Viana, Guimaraens, Prado.

Tras-os-Montes.—BRAGANÇA 5 (Sabor).

Villareal, Chaves, Miranda.

Douro or **Maritime Beira.**—OPORTO 80 (Douro), Coimbra 13 (Mondego).

Ovar, Aveiro, Mira, Figuera.

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* The Portuguese vowels *a*, *e*, *i*, *o*, *u*, *y*, and the diphthongs *ai*, *ay*, *au*, *ei*, and *ey*, have essentially the same sound as in Spanish; but *ao* is nasal, as in Macao (*Ma-coung'*), while the combinations *ei* and *oi* are not diphthongs: as Beira, Coimbra (*Be'i-ra*, *Co-im'bra*).

c has a hard and soft sound as in English, but has the *cedilla* more frequently than in Spanish.

ch and *x*=*ch* in French or *sh* in English: thus, Chaves, Funchal, Xeres (*Shâ'ves*, *Fung'shal*, *Sha'res*).

g before *e*, *i*, and *y*, and *j*, have the same sound as in French: as Caldas-do-Geres, Alemtejo (*Caldas-do-Zhe'res*, *Al-eng-te'zho*).

h is always silent, but when it follows *l* or *n* it renders these letters liqui[illegible] thus, Covilha, Minho (*Co-vil'ya*, *Min'yo*).

m and *n* are frequently nasal, and similar to that of *ao*: as Alemtejo (*Al-eng-te'zho*).

gu and *qu* are sounded like our *g* hard and *k*, the *u* being silent: thus, Guadiana, Ourique (*Ga-di-â'na*, *Oo-ree'kay*).

Upper Beira.—VISEU 9 (Vouga), Lamego 9 n. (Douro).

Almeida.

Lower Beira.—CASTELLO BRANCO 6 (Vereza).

Covilha.

Estremadura. — LISBON 280 (Tagus), Setubal or St Ubes 15 (Sadao).

Santarem, Abrantes, Thomar, Leiria, Torres-Vedras, Cintra, Cezimbra, Vimeira, Mafra.

Alemtejo.—EVORA 15 (Xarama), Elvas 16 (Guadiana).

Portalegre, Castello de Vide, Estremoz, Beja, Serpa.

Algarve.—FARO 8 (Valfermosa).

Loulé, Lagos, Tavira.

Azores.—ANGRA 13 (Terceira), Ponta Delgada 16 (San Miguel).

Madeiras.—FUNCHAL 20 (Madeira), Porto Santo 6 (Porto Santo).

7. **Descriptive Notes.**—The most interesting places in the NORTH-WEST PROVINCES OF SPAIN are the following :—

San Sebastian, a strongly-fortified seaport town, and the largest in the province, was taken by storm from the French, by the British, in 1813, and reduced to ashes ; but has since been rebuilt on an improved plan, and is now one of the finest cities in Spain. *Bilbao,* the principal port of the north of Spain, and one of the most commercial towns in the kingdom. It has shipbuilding docks, and iron- and copper-mines in the vicinity. *Vitoria,* celebrated for a great victory gained by the British and Portuguese army over the French in 1813. *Santander* was sacked by the French in 1808 : it has productive iron-mines in the vicinity. *Oviedo,* noted for its hot mineral springs and baths. *Coruña,* a flourishing commercial and fortified town, with a fine harbour. It was from this port the Spanish Armada set sail for the conquest of England in 1588 ; and near this, on the heights of Elvina, the French were defeated by the troops under Sir John Moore, who was mortally wounded in the action, January 1809. *Ferrol,* one of the three principal naval arsenals of Spain, is strongly fortified. *Santiago de Compostella,* formerly capital of Galicia, with a university, and a magnificent cathedral dedicated to St James, the patron saint of Spain.

WESTERN PROVINCES.—*Pontevedra* and *Vigo,* small towns with important fisheries of pilchards and sardines. *Leon,* an excellent sample of Spanish towns, with a diminishing population, many churches, a magnificent cathedral, and filthy streets crowded with beggars. *Zamora,* with manufactures of coarse woollen hats, leather, and gunpowder. *Salamanca,* with an ancient and famous university, formerly the principal seat of learning in Spain, but now greatly decayed : here the French were defeated by Wellington in 1812. *Badajos,* a strongly-fortified city on the Guadiana, repeatedly taken and retaken in the Peninsular War, is the birthplace of the painter Murales.

SOUTHERN PROVINCES.—*Seville* or *Sevilla,* one of the most ancient towns in Europe, the capital of Spain under the Gothic dynasty, and afterwards of Andalucia, was long the chief residence of the Spanish monarchs ; has a fine cathedral, and one of the principal universities of Spain : it has the largest cigar and tobacco manufactory in Europe, employing 3000 persons. *Cordova,* once the capital of the Caliphate of the West, and afterwards of the Kingdom of Cordova. In 759 it is said to have contained 300,000 persons. Its cathedral, when a Mohammedan mosque, was reckoned second only to that of Mecca. In modern times this city was noted for its manufacture of a sort of leather, called *cordwain* or *cordovan,* which has now declined. *Cadiz,* a large fortified city on the Isle of Leon, the principal commercial city in the kingdom, and the centre of the trade in sherry wine. *Xeres de la Frontera,* extensively engaged in the manufacture of wine, and giving its name (*sherry*) to one variety. *Malaga,* near the mouth of the Guadaljorce, is the chief port of the province, and largely engaged in exporting wines, raisins, almonds, and other fruits. *Granada,* on the Genil and Darro, in a plain renowned for its beauty and fertility, was the capital of the last Moorish Kingdom in Spain ; the palace of the kings, the famous Alhambra, a noble specimen of Moorish architecture, is still standing.

EASTERN PROVINCES.—*Murcia,* a large city on the Segura, with government factories of nitre and gunpowder. *Lorca,* a busy thriving town, with manufactories of saltpetre, linen, and thread. *Cartagena* or *Carthagena,* founded by a Carthagenian colony, on the finest harbour in the Mediterranean, is the chief naval arsenal of Spain. *Valencia,* a large maritime and manufacturing city, with a flourishing university which has seventy professors and a good library, is largely engaged in the silk manufacture. *Tortosa,* a strongly-fortified city on the Ebro, with an active fishery in sturgeons and lampreys, and having quarries in the vicinity. *Barcelona,* the former capital of Catalonia, and the second city in Spain in point of population, is strongly fortified, has a university, eight colleges, and four public libraries, one of which is celebrated as containing many valuable MSS. Barcelona is largely engaged in trade and manufactures, and has for ages been a place of great importance.

NORTH-EAST PROVINCES.—*Zaragoza* or *Saragossa* (Cæsarea Augusta), an ancient and populous city on the Ebro, and the only place of importance in the north-eastern provinces, was the capital of the old Kingdom of Aragon ; it has a university which holds the third rank in Spain for the number of its students : its cathedral is celebrated over Spain for its sanctuary, which attracts numerous pilgrims. Memorable for a most heroic defence against the French in 1809, when it was taken after a siege of eight months. *Pamplona* (Pampelo), the capital of Navarra, is one of the principal fortresses of Spain.

CENTRAL PROVINCES.—*Burgos,* the former capital of Old Castile, has greatly declined from its former importance, and is now chiefly celebrated for its cathedral, reckoned one of the finest in Europe. The French took it in 1808, and held it till 1813, when it surrendered to the Duke of Wellington. *Valladolid,* on the Pisuerga, formerly a place of great importance, but now much decayed, contains a celebrated university, with eight colleges ; here Columbus died in 1506. *Segovia,* noted for its magnificent Roman aqueduct of 161 arches, which rise 100 feet above the valley, and numerous other remains of its former grandeur. MADRID, the capital of Spain, on the Manzanares, an affluent of the Tagus, and in the centre of a barren plain, 2200 feet above the level of the sea. It is consequently subject to great inequalities of temperature. Strangers consider it the most expensive capital in Europe to live at, as also the unhealthiest ; the hotels are of a very inferior description, and much difficulty is experienced in procuring good accommodation. Madrid is situated nearly in the centre of the Peninsula, far from the sea, and ill-watered—the Manzanares being a mere brook. It is about eight miles in circuit; the modern part of the city is handsome, but the number of convents and other religious houses, with grated windows and without visible doors, gives the streets a sombre aspect. The Calle de Alcala is reckoned one of the finest streets in Europe, but it is the only fine street in Madrid. The royal palace is a magnificent edifice, 100 feet high, 470 feet long, and as many wide. There is no properly-equipped university, but there are several literary and scientific institutions. The royal library contains 130,000 volumes, and many MSS., and there are several other libraries. Madrid is the birthplace of Alonzo d'Ercilla, Lopez de Vega, Calderon de la Barca, Nuñez, and the brothers Velasquez. *Toledo* was the capital of Spain under the Goths, at which time it had 200,000 inhabitants, though now it has but 15,000: its cathedral is still the metropolitan church of Spain. Toledo was long famous for the manufacture of sword-blades; and here were held several general ecclesiastical councils.

INSULAR PROVINCES.—*Palma*, a fortified city on the S.W. coast of Majorca, has manufactures of silks and woollens, and in its vicinity a huge palace, formerly occupied by the Spanish Inquisition. *Port-Mahon*, also a fortified town, capital of Minorca, and the residence of the military governor. *Santa Cruz*, capital of the Canary Islands, in the island Teneriffe, has an export trade in wine, which was formerly much more extensive. *Las Palmas*, the principal town in the same group, has a population of 17,000.

Spain, including the islands, contains 282 towns at or above 5000 inhabitants; 120 at or above 10,000; 21 at or above 20,000; 10 at or above 50,000; 8 at or above 100,000. The towns above 50,000 are Madrid, Barcelona, Seville, Valencia, Granada, Malaga, Murcia, Cadiz, Zaragoza, Cordova. The southern provinces—Andalucia and Granada—are greatly more populous than any other: they contain 57 towns above 5000, 43 above 10,000, 8 above 20,000, and 5 above 50,000. The western and north-western provinces are the least populous, containing together only 27 towns above 5000, 20 above 10,000, and 1 above 20,000. The twelve central provinces are also very thinly peopled, having only 19 towns above 5000, 16 above 10,000, 2 above 20,000, and 1 (the capital) above 50,000.

TOWNS IN PORTUGAL.—*Braga*, capital of Minho, a considerable town with manufactures of firearms, jewellery, cutlery, and hats. *Bragança*, which gives title to the present royal family, has manufactures of velvets and other silk fabrics. *Chaves*, a fortified town, with hot saline springs of 129° Fahr. Oporto, or Porto, a large commercial city at the mouth of the Douro, capital of province Douro, which is formed of the maritime portion of the former extensive province Beira. In population and commercial importance it ranks next to Lisbon, which it excels in the amount and variety of its manufactures. It exports immense quantities of *port* wine, and has extensive silk-factories, and some of linen and cotton goods. Near it are mines of coal, copper, and antimony, which are at present little wrought. *Coimbra*, the capital of the old province of Beira, on the Mondego, is the seat of the sole university in the kingdom, which has eighteen colleges numerously attended, with a library, museum, and observatory. Coimbra is perhaps the rainiest locality in Europe—111 inches of rain fall annually. LISBON, the capital of Portugal, on the right bank of the Tagus near its mouth, has upwards of a quarter of a million inhabitants. It contains many splendid architectural monuments, especially the palaces of the nobility, and the magnificent aqueduct of Alcantara, with thirty-six arches of white marble. The streets, however, are narrow, winding, and dirty. There are few important manufactures, except of jewellery and trinkets; but there are several scientific and educational establishments. The greater part of the city was destroyed by an earthquake in 1755, when 60,000 persons perished. Its commerce, which was once considerable, has greatly declined since the Portuguese colonies became independent. Lisbon was the birthplace of Camoens. *Cintra,* a small town, is distinguished for the beauty of its scenery. *Torres-Vedras,* celebrated in the Peninsular War for the lines of defence constructed by Wellington in 1810 to obstruct the approach of the French. *Vimeira,* where the Duke of Wellington defeated the French in 1808. *Evora,* an ancient city of Roman origin, with manufactures of hardware and leather. *Elvas,* a fortified frontier city on the right bank of the Guadiana, with a college and a Moorish aqueduct. *Faro* exports fresh and dried fruits, wine, cork, sumach, and anchovies. *Angra,* a fortified seaport, and capital of the Azores, with a military college and other educational establishments. *Ponta Delgada,* with 16,000 inhabitants, is the principal town in the Azores with regard to population and commerce. *Funçhal* (pronounced Fungshal), the capital of the island Madeira and of the entire group (population 20,000), is engaged in the manufacture and exportation of Madeira wine.

Portugal, including the islands, contains 45 towns at and above 5000 inhabitants; 10 at and above 10,000; 3 at and above 20,000; 2 (Lisbon and Oporto) above 50,000.

8. **Capes.**—*In Spain:* Cape Finisterre, in Galicia, the most western point of Spain; Ortegal, in the same province, the most northern point of Spain; Peñas, north of Asturias; Creuse, in Catalonia, the most eastern; St Martin, in Valencia; Palos, in Murcia; de Gata, in Granada; Europa Point, near Gibraltar; Tarifa Point, the most southern land of the continent of Europe; Trafalgar, west of Andalucia, off which Lord Nelson defeated the combined French and Spanish fleets in 1805.

In Portugal: Cape Santa Maria, the southernmost point of Portugal; St Vincent, S.W. of Algarve, off which Sir John Jarvis signally defeated the Spanish fleet in 1797; Espichel and Roca guard the entrance of the Tagus: the latter is the most western point of the continent of Europe.

9. **Islands.**—*Spanish:* The Balearic Isles,* E. of Valencia, consisting of Majorca, Minorca, Iviza, Formentera, and Cabrera; Leon, W. of the province Cadiz; Canary Islands,† 60 miles S.W. of Marocco — the principal are Lazarote, Fuerte Ventura, Grand Canary, Teneriffe, Gomera, Palma, and Hiero.

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* In Spanish, *Baleares;* they form one of the 49 provinces; area 1758 square miles, population 258,000. The climate is temperate and healthy, the soil fertile; principal products olives, wine, brandy, fruits, saffron, flax. Surface uneven; the Silla de Torillos, in Majorca, rises to 5114 feet.

† The Canaries are of volcanic origin: many extinct craters are found among the mountains, which attain a great elevation, especially the Peak of Teneriffe, which is 12,182 feet above the level of the sea. The climate is equable, and the tropical heat is moderated by the Atlantic breezes: principal products are wine, oil, grain, sugar-cane, and fruits.

Portuguese: The Azores,[*] 800 miles W. of Portugal; principal San Miguel or St Michael, Terceira, Pico, San Jorge, Santa Maria. The Madeira Isles,[†] 660 miles S.W. of Portugal, consist of Madeira, Porto Santo, and the Desertas.

10. **Bays and Straits.**—Bay of Santander, in the north of that province; Ria de Betanzos, de Muros, d'Arosa, de Pontevedra, de Vigo—all in the west of Galicia; Bay of Cadiz, Bay and Strait of Gibraltar, Gulf of Almeria, all south of Andalucia; Encanizada, S.E. of Murcia; Gulfs of Amposta and Rosas, E. of Catalonia.

In Portugal.—Bahia d'Aveiro, W. of province of Douro; estuary of the Tagus and Bay of St Ubes, in Estremadura; Bay of Lagos, S. of Algarve.

11. **Mountain System.**—All the mountain-ranges of the Peninsula belong to the Hesperian System.—(See "Europe," p. 70.) Including the Pyrenees, there are five principal ranges which have a general direction of W. to E. The two loftiest ranges form respectively the northern and southern boundaries of the great central table-land of Spain, and the three intermediate ranges traverse it. The different ranges, owing to the peculiar jagged *saw-like* appearance of their summits, are termed *Sierras*. The culminating-point of the entire system is Cerro Mulhaçen in the southernmost range (11,663), where the line of perpetual congelation is 11,200 feet above the sea; but in the Pyrenees it is only 8000 feet.

The Pyrenees extend from Cape Creuse, in Catalonia, to the Basque Provinces, and are thence prolonged by the Asturian and Cantabrian ranges to Cape Finisterre in Galicia, forming the great watershed between the Garonne and Bay of Biscay on the one side, and the Ebro and Douro on the other. Highest summits:—

	Feet.
Pic de Nethou (Maladetta), ...	11,168
Sierra d'Aralar, in Guipuzcoa, ...	7,098
Pena de Peñaranda (Asturia), ...	10,000

Mountains of Castile, or *Central Chain,* between the Douro and Tagus, and extending from Cape Roca in Portugal to the watershed dividing the basins of the Tagus and Ebro. It comprises the following ranges: Sierra Estrella in Portugal, Sierra Gata, Sierra Gredos, Sierra Guadarama in the centre of Spain: highest summit in Sierra Gredos, 10,500 feet.

Mountains of Toledo, stretching from Cape Espichel in Portugal to the S.W. of Aragon, and consisting of the Sierras of Ossa, Mamez, Guadalupe, Toledo, Molina, and Albarracin, separate the basins of the Tagus and Guadiana: the highest summit (5115 feet) is in Sierra Guadalupe.

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[*] The Azores, or Western Islands—in Portuguese *Açores*—are of volcanic origin, with steep and rugged coasts, abounding with deep ravines and lofty mountains. The peak of Pico is 7613 feet high. Climate temperate and healthy, but subject to violent earthquakes: principal products are wines, all kinds of grain and pulse, oranges, sugar-cane, coffee, and tobacco. Area 700 square miles; population 214,300.

[†] The island of Madeira has a peculiarly genial climate, and it is resorted to by invalids afflicted by pulmonary diseases.

Sierra Morena, from Cape St Vincent to Cape St Martin, and having an insular prolongation in the Balearic Isles, separates the basins of the Guadiana and Guadalquivir in the W., and those of the Xucar and Segura in the E.

	Feet.
Highest summit, Aracena, ...	5550
Sierra Monchique, in Portugal, ...	4080

Sierra Nevada, from the Rock of Gibraltar to Cape Palos in Murcia, separates the basin of the Guadalquivir from the Mediterranean, and contains the culminating-point of the Hesperian System —viz., Cerro Mulhaçen, in Granada, 11,663 feet.

12. **Principal River-Basins.**—The twelve river-basins enumerated in the following table embrace, if we include Andorra, 40 capitals out of the 56 capitals of Spain and Portugal that are situated on the mainland, being 5-7ths of the entire number. The capitals not here included are Tolosa, Bilbao, Santander, Oviedo, Coruña, Pontevedra, Braga, Evora, Faro, Huelva, Almeria, Alicante, Castellon-de-la-Plana, Tarragona, Barcelona, Gerona. The eight basins whose area is given embrace 35 capitals, or 5-8ths of the whole, and have an aggregate area of 122,350 square miles, or 4-7ths of the area of the entire Peninsula.

BASINS.	Length in miles.	Area in sq. miles.	CAPITALS.
Minho, . .	130	11,840	Orense, Lugo.
Douro, . .	400	29,250	Oporto, Zamora, Soria, Bragança, Salamanca, Leon, Valladolid, Palencia, Burgos, Avila, Segovia, Viseu.
Vouga, . .	50		
Mondego, .	130		
Tagus, . .	540	21,760	LISBON, Toledo, Castello Branco, Caceres, MADRID, Guadiana.
Guadiana, .	380	19,360	Badajos, Ciudad Real.
Guadalquivir,	280	15,040	Cadiz, Sevilla, Cordova, Granada, Albacete, Jaen.
Guadaljorce,.	80	...	Malaga.
Segura, . .	180	...	Murcia.
Xucar, . .	200	...	Cuença.
Guadalaviar,	130	...	Valencia, Teruel.
Ebro, . . .	340	25,100	Zaragoza, Logrono, Lerida, Huesca, (Andorra), Pamplona, Vitoria.

13. **Table of Rivers and Towns.**—There are 315 towns in the Peninsula at or above 5000 inhabitants; or 187 of less than 10,000, and 128 exceeding that population. These stand on 154 rivers, of which 54 enter the sea, the remaining 100 being their affluents. These 315 towns are given in the following table. The capitals of

provinces are distinguished by being printed in SMALL CAPITALS, towns above 10,000 in Roman letters, and the remainder in *Italics*.

Basins inclined to the Atlantic.

Rivers.	*Towns.*
Bidassoa,	*Fuenterrabia.*
Urumea,	San Sebastian.
Orria,	TOLOSA.
Nervion,	BILBAO.
Miera,	SANTANDER.
Aviles,	*Aviles.*
Nalon,	OVIEDO, n., on the Ovia, a tributary.
W. Co. Galicia,	Ferrol.
Betanzos,	*Betanzos.*
Mero,	CORUÑA.
Ulla,	Santiago de Compostella, n.
Sar,	Santiago, *Padron.*
Lerey,	*Pontevedra.*
Ria-de-Vigo,	*Vigo.*
Minho,	ORENSE, LUGO.
Minotello,	*Mondonedo*, n., on the Masma.
Lima,	*Viana* (Portugal).
Cavado,	*Prado*, do.
Ria d'Este,	BRAGA, do.
Ave,	*Guimaraens*, do.
Douro,	OPORTO, *Miranda* (in Portugal), ZAMORA, *Toro-Arbucal*, SORIA.
Tamego,	*Chaves* (in Portugal).
Corga,	Lamego, do.
Sabor,	BRAGANÇA, do.
Coa, *l*	*Almeida*, do.
Agueda, *l*	*Ciudad Rodrigo.*
Tormes, *l*	SALAMANCA.
Esla,	Benavente.
Tuerto,	*Astorga.*
- Bornesga,	LEON.
Seguillo,	Medina del Rio Seco.
Pisuerga,	VALLADOLID.
Carrion,	PALENCIA.
Arlanzon, *l*	BURGOS.
Adaja, *l*	AVILA.
Eresma,	SEGOVIA.
Vouga,	*Ovar, Aveiro*, VISEU (in Portugal).
Co. of Douro,	*Mira*, do.
Mondego,	*Figueira*, Coimbra, *Guarda*, do.
Soura, *l*	*Pombal*, do.
Lis,	*Leiria*, do.
Co. Estremadura,	*Mafra, Cintra*, do.
Sizandro,	*Torres-Vedras*, do.
Tagus,	LISBON, *Santarem, Abrantes* (in Portugal), *Garrobellas*, Talavera de la Reina, TOLEDO, *Ocaña*, n., *Colmenar.*

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
Zatas, or Ervidal, *l.*	*Portalegro* (in Portugal).
Anhatura, *l*	*Estremoz,* do.
Zezere,	*Covilha,* do.
Narbao,	*Thomar,* do.
Veresa,	CASTELLO-BRANCO, do.
Figueiro,	*Castello de Vide,* do.
Sever, *l*	*Valencia de Alcantara.*
Salor, *l*	*Montanches.*
Caceres,	CACERES.
Alagon,	*Alcantara, Bejar.*
Jerte, *l*	*Placentia.*
Rio del Monte, *l*	*Truxillo.*
Tajuna,	*Chincon.*
Xarama,	MADRID, n.
Manzanares,	MADRID.
Hinares, *l*	*Alcala,* GUADALAXARA.
Co. Estremadura,	*Cezimbra* (in Portugal).
Sadao,	Setubal, do.
Xamara, or Xarama,	EVORA, do.
S. Co. Algarve,	*Lagos,* do.
Valfermosa,	FARO, *Loulé,* do.
Seca,	*Tavira,* do.
Guadiana,	*Ayamonte, Serpa* (in Portugal), *Olivenza,* Elvas, BADAJOS, Don Benito, Villanueva de Serena, n., CIUDAD REAL, n.
Odiarca,	*Beja* (in Portugal).
Ardila, *l*	*Xeres de los Caballeros.*
Murtiga, *l*	*Fregenal de la Sierra.*
Gavora,	*Albuquerque.*
Guadajira, *l*	*Villafranca.*
Matachal, *l*	*Llerena.*
Zujar, *l*	Villanueva, *Cabeza del Buey.*
Guadalefra, *l*	*Castuera.*
Guadalmez,	*Almaden,* n.
Guadaramillo,	*Hinojosa,* n., *Pozoblanco.*
Jabalon, *l*	Almagro, n., Val de Peñas, *Santa Cruz de Mudela, Villanueva de los Infantes,* n.
Vejer, *l*	*Almodovar.*
Zancara,	*Alcazar de San Juan,* n.
Giguela,	*Herencia, Quintanar.*
Amarquilla,	*Madridejos, Consuegra.*
Azuer, *l*	Daimiel, *Manzanares,* SOLANA.
Odiel,	HUELVA, *Valverde.*
Tinto,	*Palos, Moguer.*
Guadalquivir,	*Lebrija,* S. Lucar de Barameda, SEVILLE, Carmona, n., CORDOVA, *Bujalance,* Montoro, Andujar, Baeza, n., Ubeda.
Salado, *l*	Utrera, n.
Guadaira, *l*	*Alcala,* Moron de la Frontera.
Guesna,	*Constantina, Cazalla.*

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
Carbones, *l*	Carmona, Marchena.
Madre Vieja, *l*	Campana, *Fuentes-de-la-Campana,* Osuna, n.
Genil, *l*	Ecija, *Puente Genil, Estepa,* n., Loja, *Montefrio,* n., GRANADA.
Cabra,	*Rambla,* n., Montilla, n., Cabra, Lucena, n.
Salado,	Priago.
Alhama, *l*	*Alhama.*
Guadiata,	*Villanueva.*
Guadajos, *l*	*Fernan Nuñez,* n., *Espejo,* Castro, Baena, n., Alcala la Real.
Salado, *l*	*Porcuna,* n., *Torre Don-Gimeno,* Martos.
Guadarmina,	*Alcaraz,* ALBACETE, n., Chinchilla, n., *Bonillo.*
Guarrezas,	*Linares.*
Jaen, *l*	JAEN.
Gaudiana Minor, *l*	Ubeda.
Barbata,	Baza, n., *Huescar, Puebla.*
Vega, *l*	*Cazorla.*
Guadalete,	CADIZ, n., *Rota,* n., Puerto Santa Maria, Xeres de la Frontera, Arcos, *Olvera.*
Majazeite, *l*	*Ubrique.*
Lirio,	San Fernando, n., Chiclana, Medina-Sidonia.
Barbate,	*Vejer.*
Vadalmedina,	*Alcala de los Gazules.*

Basins inclined to the Mediterranean.

Strait of Gibraltar,	*Tarifa,* Algeçiras, Gibraltar, *San Roque.*
Guadiaro,	*Gimena, Grazalema,* n., Ronda.
S. Co. Malaga,	*Estepona, Marbella.*
Guadaljorce,	MALAGA, n., *Alora,* Antiquera, *Archidona.*
Faala,	*Alhaurin, Coin, Monda.*
Velez,	Velez Malaga, *Colmenar.*
S. Co. Granada,	*Almuñacar.*
Guadalfeo,	Motril.
Adra,	*Adra,* Dalias, Berja.
Almeria,	ALMERIA, *Nijar,* n., *Gergal,* n.
Almanzora,	Vera, Cueva de Vera, *Seron,* Huercalovera.
S. Co. Murcia,	*Almazarron,* Cartagena.
Segura,	Orihuela, MURCIA, Cieza, *Calasparra, Yeste.*
Elche, *l*	Elche, *Crevillente, Aspe, Novelda, Monovar, Villena, Yecla,* n., *Caudete.*
Alfera,	*Almanza.*
Sangonera,	MURCIA, *Mula,* n., *Alhama,* n., *Fuente-Alamo, Totana,* Lorca, *Velez Blanco.*
Quiper,	*Bullas.*
Velez,	Velez Rubio, *Oria,* n.
Caravaca,	Caravaca, Cehigan.
Moratalla,	*Moratalla.*
Mundo, *l*	Hellin, *Jumilla,* n., *Tobarra.*

Basins inclined to the Mediterranean (continued).

Rivers.	*Towns.*
Madera, *l*	Peñas de San Pedro, n.
E. Co. Alicante,	ALICANTE, *Villajoyosa.*
Alcoy,	*Gandia, Concentama,* Alcoy.
Xucar,	*Cullera, Sueca,* Alcira, *Ayora,* n., CUENÇA.
Magro, *l*	Requena, *Utiel.*
Albayda,	Xativa San Felipe, *Carcagente,* Onteniente.
Canoles, *l*	*Enguera.*
Jara, *l*	*Tarazona.*
Guadalaviar,	VALENCIA, TERUEL.
Palancia,	*Murviedro, Segorbe.*
Rio Seco,	*Burriana.*
Mijares,	*Villareal,* CASTELLON-DE-LA-PLANA, *Alcora,* n.
Co. Castellon-de-la-Plana,	*Bonicarlo,* Vinaros.
Ebro,	Tortosa, *Caspe,* ZARAGOZA, *Tudela, Calahora,* LOGROÑO, *Haro.*
Segre, *l*	LERIDA.
Cinca,	*Fraga, Barbastro.*
Isuela,	HUESCA.
Balira,	ANDORRA (capital of Republic).
Guadalupe,	*Alcañiz.*
Bergantes,	*Morella,* n.
Jalon,	*Calatayud.*
Queilas,	*Tarazona.*
Alhama,	*Corella.*
Aragon, *l*	*Sanguesa.*
Agra,	PAMPLONA.
Ega, *l*	*Estella.*
Zadorra, *l*	VITORIA.
Francoli,	TARRAGONA, Reus, Valls.
Foix,	Villa-Nueva, *Villafranca.*
Llobregat,	*Tarrasa,* Manresa.
Noya,	Igualada, *Cervera,* n.
Besos,	BARCELONA.
Co. of Catalonia,	Mataro, *Blanes, S. Feliu de Guixols.*
Ter,	GERONA, Vich.
Fluvia,	Olot.
Manol,	*Figueras.*

14. **Lakes.**—There are no lakes of any importance in either Spain or Portugal. There is, however, a large salt-water lagoon on the coast of Valencia, abounding in fish and wild-fowl, called Albufera de Valencia, eleven miles by four; and three small lakes in Ciudad-Real, near the sources of the Guadiana. The first, which forms its source, is called Lake Real; then the river traverses some miles of its course under ground, and reappears in two small lakes called Los Ojos de Guadiana, or "the Eyes of the Guadiana."

15. **Climate.**—The Peninsula being so extensive, and there being a great difference of elevation between the interior and the maritime

districts, great differences of climate exist. On the great central plateau, which has an average elevation of 2726 feet, great heat and drought prevail in summer, and severe cold in winter. At Madrid, in the centre of the Peninsula, the mean annual temperature is 58°.2, the mean summer temperature is 76°.4, and the mean winter temperature 43°.1. Here winter is the rainy season, when frosts are severe at night, the thermometer often sinking below 40°, while in summer it not unfrequently rises to 90°, and the total amount of annual rain does not exceed 10 inches. The most noxious winds are the *Solano*, a hot wind from the S., and the *Gallego*, a cold, piercing wind from the N.W. In the *N. W. Provinces* the climate is damp, the annual precipitation varying from 25 to 35 inches. In the western provinces it is mild, but variable; in the S.W., almost African; and in the S.E. an almost perpetual spring prevails.

The climate of PORTUGAL is generally healthy, especially in the elevated coast regions. Mean annual temperature at Lisbon 61°.3, winter 52°.4, and summer 70°.9. Rain is very abundant on the west coast, especially in autumn, the tract extending from Coimbra to Mafra being the rainiest spot on the continent of Europe. Snow is rare in the southern provinces of the kingdom.

16. **Geology.**—The western half of the Peninsula, from the Bay of Biscay to the Guadalquivir, consists for the most part of Silurian strata, interspersed with extensive tracts of granite, especially in the northern half of this area; another belt of Silurian rocks lines the coast from Gibraltar to Cartagena; and a third is found around Calatayud, between the sources of the Tagus and Douro. Upper Palæozoic beds prevail in the Pyrenees, and in a large tract S. and W. of Oviedo, between the sources of the Minho and Ebro. Secondary beds prevail along the north coast from Cape Peñas to St Sebastian; another broad tract extends in a S.E. direction from Burgos to Castellon-de-la-Plana; a similar belt along the heights which divide the waters of the Guadalquivir from those flowing to the Mediterranean; and a fourth along the Atlantic, from Lisbon to near Ovar. Almost the entire remainder of Spain consists of tertiary formations, little of which is found in Portugal, except along the south bank of the Tagus from its mouth to Alcantara.

17. **Minerals.**—The mineral treasures of Spain are remarkable both for their variety and abundance, there being scarcely any important mineral substance that is not found in one or more localities. The principal mines presently wrought, however, are in the Pyrenees and their western continuation, and in the Sierra Morena. In the Pyrenees are found immense deposits of iron, copper, and lead; in the Cantabrian Mountains, and recently in Majorca, valuable deposits of coal; tin, zinc, antimony, arsenic, and cobalt, in many localities; silver near Guadalcanal in Seville; quicksilver at Almaden; rock-salt in Cordova; precious stones in many places; and jasper, granite, alabaster, and beautifully variegated marble almost everywhere. Nearly all the cobalt employed in the manufactures of Europe is found in Galicia; and the quicksilver mines of Almaden have been long celebrated. These precious "treasures of the

low-lying deep," however, are sadly neglected; for in Spain all things are in a state of utter stagnation.

The minerals of Portugal are almost as varied and valuable as those of Spain, and almost equally neglected. The principal mineral products that are in some measure wrought are iron, marble, and salt. Iron is very abundant; there are only two coal-mines, one at Oporto and the other at Figueira; tin, lead, and antimony are now wholly neglected.

18. **Botany.**—The indigenous vegetation of Spain and Portugal belongs exclusively to Schouw's third "Phyto-Geographical Region," described under "Europe," par. 19. This region also embraces Italy, Greece, Asia Minor, Syria, and the North of Africa. The number of indigenous plants in the whole Peninsula has not been ascertained; but Reuter collected 1250 species of flowering-plants in New Castile alone. According to Webb and Berthelot, 900 species of flowering-plants are found in the Canary Islands. The best building-timber grows on the north coast; the cork-tree, the Kermes oak, and the Sumach tree, farther south. Of food-plants, the vine, olive, orange, fig, citron, date, abound on the east coast, together with carobs, or St John's bread; sweet potato, the sugar-cane, and the cotton-plant, along with pomegranates, figs, almonds, olives, in the S.; nuts, gooseberries, and orchard-fruits in the N. and N.W. In Portugal are found the vine, date, olive, orange, lemon, citron, the American aloe, rice, stone-pine, orchard-fruits, and water-melons.

19. **Agriculture** is in a very backward state in all parts of the Peninsula. The implements of husbandry are of the rudest description; the rotation of crops, and indeed all the modern improvements, are wholly unknown. Though the soil in many parts is extremely fertile, especially in Portugal and the south of Spain, but a small portion of the surface is under cultivation. The principal objects of culture are grain crops of all kinds (including wheat, barley, maize, and rice); vines, cotton, tobacco, mulberry-plant, sugar-cane, hemp, and flax. The corn crop is frequently insufficient for home consumption; but large quantities of wine and fruits are exported, those of Xeres (sherry), Malaga, and Oporto (port wine), being the most celebrated. Vast numbers of Merino sheep (from 5,000,000 to 6,000,000) are reared for the sake of their wool, which is the finest in Europe.

20. **Zoology.**—Of the 223 mammalia inhabiting Europe, 67 are found in the zoological province to which Spain belongs, and which is conterminous with the phyto-geographical region above mentioned. Of the 490 European birds, 294 are found here; and of the 73 reptiles, there are here 51 species. Of the 67 mammals, 42 species are carnivora, 14 rodents, and 9 ruminants; while of the two remaining one is a quadrumanous animal—viz. the Barbary ape, which inhabits the rock of Gibraltar, the only locality in Europe where these animals are found; and the other a pachyderm—viz. the *Sus scropha*, or wild-boar. The wolf, bear, chamois, and ibex, are found in the Pyrenees; the marten in Biscay; the chameleon near Cadiz; lynxes, foxes, wildcats, and weasels, in numerous localities. The

buffalo is the only bovine species, but there are three species of sheep. Of the numerous birds, we can only mention the eagle, vulture, and flamingo. Fish is not plentiful in the rivers, but abundant on the Atlantic coasts.

21. **Ethnography.**—The people of the Peninsula nearly all belong to the Greco-Latin variety of the great Caucasian race; but overrun as the country has been at different times by widely different tribes, a considerable variety of race appears in the different provinces. The Celts were the first inhabitants, and Celtic blood still predominates both in Spain and Portugal. The south of Spain was colonised by the Phenicians and Carthaginians in the third century before our era; the Romans subdued the whole Peninsula about a century afterwards; the Vandals, Suevi, and afterwards the Visigoths, overran the country in the beginning of the fifth century; the Moors, or Saracens, drove the Goths to the northern mountains in A.D. 712, and for seven centuries thereafter retained possession of the centre and south, where they established several powerful kingdoms, but were finally expelled in 1492 by the Christians, under Ferdinand and Isabella. Notwithstanding this great intermixture of blood, four distinct families are still discernible—viz. the Spaniards proper, descended from the Celts, Phenicians, Romans, and Goths, constituting about $\frac{19}{20}$ths of the entire population; the Basques, in the north-west provinces, the descendants of the ancient Iberians; the Moors, in the south, and the Gypsies or Gitanos, probably of Hindu origin, numbering about 45,000 in various localities. The Jewish race was totally expelled in 1492.

Languages.—Notwithstanding the great extent of the Peninsula, the languages and dialects are comparatively few; and with the exception of the *Basque* or *Esquara*, whose relations are yet unknown, belong to the Greco-Latin family. The Spanish and Portuguese, both of them descendants of the ancient Galician, and for a long time mere dialects of the same language, have at length come to differ considerably. The *Spanish proper*, or *Castilian*, found in its greatest purity in Castile, is manifestly descended from the Latin, though with a considerable admixture of Gothic, and more especially of Arabic words. So conspicuous is the latter element that some philologists reckon it as a sort of connecting-link between the Indo-European and Semitic stocks. In grammatical structure, however (the main element to be considered in determining the affinities of a language), as also in the great bulk of its roots, it bears little resemblance to the Arabic or any other Semitic tongue. Besides the greater part of the Peninsula, Spanish is spoken in Mexico, and in the Philippine Islands and other eastern possessions of Spain. The *Catalan* or *Catalonian*, a mere dialect of the Spanish, is spoken in the old provinces Catalonia and Valencia, and in the Balearic Isles: it has fewer Arabic words than the former, and more resembles the language of the Troubadours of Southern France. The *Portuguese* is spoken in Portugal, Madeira, the Azores, and Brazil. It is a twin sister of the Spanish, both being descended from the Latin through the Galician; but it now exhibits so many peculiarities that the difference between the two languages is something more than dialectic. The Portuguese is less guttural, but harsher and more unpleasing in sound than the Spanish, and possesses a class of words which cannot be traced in the Spanish vocabulary, and which are supposed to have proceeded from dialects of the Berber language which prevails in the North of Africa.

Religion.—Romanism, in its most bigoted form, is the only religion of Spain; no other form of Christianity is tolerated, and the common rites of sepulture are denied to Protestants. Here the religion of Rome has had free scope to bring forth and mature its legitimate fruits, which are but too apparent in the poverty, ignorance, and superstition of the inhabitants. In Portugal, Jews and some other denominations receive a certain amount of toleration, but hostility to Protestantism is extremely inveterate.

The *Education* of both kingdoms is in a lamentably deficient state. In Spain only $\frac{1}{4}$th of the population can read; $\frac{1}{10}$th only can write; and $\frac{1}{18}$th of the population are at school. There are 22,300 schools, attended by 839,000 pupils; 23 elementary normal schools; 10 normal schools of the first class; and 10 universities, the chief of which are those of Salamanca, Valencia, Zaragoza, and Valladolid.

Portugal, with the exception of Russia, Sicily, and the Pontifical States, is the worst educated country in Europe. Only 15 per cent of those between seven and fourteen years of age are at school, while in Switzerland and Prussia the ratio exceeds 90 per cent. There are 873 common schools; 27 lyceums; 17 upper seminaries; and only 1 university, that of Coimbra.

22. **Literature.**—The most distinguished names in Spanish literature are the following:—

POETRY.—The author of "The Cid," who has been called "The Homer of Spain:" this, the oldest and best poem in the Spanish language, describes the adventures of *El Seid*, "the Lord" (a famous Castilian hero, born at Burgos in 1040), and was written about the middle of the twelfth century; Herrera, Ercilla, Lope de Vega, Calderon de la Barca, Garcilasso, Gomez de Quevedo.

HISTORY.—Mariana, author of "The History of Spain;" and de Solis, the historian of "The Conquest of Mexico."

FINE ARTS.—Ribera, Murillo, Murales, Fernandez, Ribalta, Velasquez.

FICTION.—Cervantes, author of "Don Quixote."

SACRED LITERATURE.—Cardinal Ximenes, Isidore of Seville, Michael Servetus.

The classic poets Lucan and Martial, and Seneca the philosopher, were natives of Spain, and probably Quintilian.

Portugal can boast of few names that have won for themselves a European reputation. The most distinguished name in its literature is Camoens, author of "The Lusiad;" next to Camoens may be placed Gil Vicente and Saa de Miranda, the dramatists; Antonio Ferreyra, who has been called the Portuguese Horace; Rodriguez Lobo; and Joãs de Barros, an elegant prose writer. The names of Columbus and Spinoza are also closely associated with the history of Portugal, though not natives of that country.

National Character.—The Spaniards are grave, stately, and formal in their manners; frugal and temperate in diet; extremely indolent in disposition; of an enthusiastic temperament, which sometimes prompts them to acts of chivalry, but more frequently to the perpetration of revolting atrocities, especially when goaded on by the love of gain or by religious bigotry; in proof of which we need only refer to their inhuman treatment of the natives of America when that continent was discovered, and to the annals of the Inquisition, an infamous institution, which was first established at Seville in 1481, at the instance of Ferdinand, the husband of Isabella, and which reigned in all its terrors down to the present century. "The Spanish statistics of this infernal engine," says Milner, "which was only abolished in 1820, include 34,611 persons burned alive, 18,000 burned in effigy, and 288,109 consigned to the prisons and galleys."

The Portuguese are represented as dignified, polite, and temperate, but excessively filthy, both in their houses and persons: they are further characterised by an inveterate dislike to Spaniards, whom, notwithstanding, they greatly resemble in manners and disposition. They are equally bigoted, cruel, and indolent; equally proud and revengeful; and equally fond of the barbarous amusement of bull-fighting; and whatever difference there may be, is in favour of the Spaniards, there being no country in Europe where civilisation and morality are at a lower ebb than in Portugal.

23. The **Government** of Spain, long despotic, has at length, after passing through many vicissitudes, become nominally a representative constitutional monarchy, the reigning sovereign being Queen Isabella II.; but civil liberty is little understood, and the country has for many years been distracted by anarchy and civil war. The *Army*, in 1858, consisted of 200,000 men and officers; *Navy*, 2 ships of the line, 4 frigates, 39 smaller vessels, 37 steamers—in all, 82 ships, carrying 887 guns. *National Debt*, £159,450,000. *Revenue*, £22,733,000. *Expenditure*, the same.

The Government of Portugal is also a constitutional monarchy; reigning sovereign, Don Pedro V. The *Army* in 1858 numbered 25,194; *Navy*, 39 vessels of all sizes, carrying 362 guns. *Public Debt*, £23,010,000. *Revenue*, £2,795,960; *Expenditure*, £2,967,000.

24. **Commerce.**—Though few countries in Europe possess greater commercial facilities, on account of the great extent of seaboard, yet such is the natural indolence of the Spaniards that their commerce is quite inconsiderable; and the little that exists can be estimated with difficulty, owing to the universal practice of smuggling. In 1851 the total value of the *Exports* was estimated at £5,373,000; *Imports*, £7,426,600. The principal exports consisted of wool, wine, brandy, oil, fruits, iron, lead, mercury, salt, barilla, skins, cork, and dye-stuffs, which were, for the most part, sent to

France and Great Britain. The chief articles imported were colonial produce, dried fish, salted provisions, butter, cheese, rice, cotton and woollen goods, cutlery, glass, and building-timber. *Tonnage* (in 1851) entered, 316,761 tons; cleared, 303,818 tons. The principal ports are Barcelona, Cadiz, Malaga, Bilbao, Alicante, and Valencia. The *Manufactures* consist chiefly of silk, cotton, woollen, and leather goods, cutlery, iron, and copper goods. The government has also manufactories of saltpetre, gunpowder, cannon and firearms, tobacco, porcelain, and glass.

The commerce of Portugal has dwindled down to almost nothing since the loss of Brazil in 1826, and what remains is principally conducted by the English and other foreigners. The principal exports are wine, brandy, vinegar, salt, oil, pork, fruits, silk, wool, cork, leeches, bones, glass, and porcelain. Estimated value of *Exports* in 1851 was £1,922,290. The total *Imports* were valued at £2,431,297: these consisted chiefly of wheat, rye, barley, and maize, foreign timber, salted provisions; woollen, cotton, linen, and silk fabrics; iron, steel, and various other metallic goods; coal, tar, pitch, dyes, and drugs. The principal ports are those of Lisbon, Oporto, and Setubal.

25. **Inland Communication.**—*Railway* communication is almost unknown in the Peninsula. The total number of miles open for traffic in 1858 was 235. One line, 18 miles in length, connects Barcelona with Mattaro; another, Madrid with Alcazar, 80 miles; a third, Valencia with Xativa de Felipe, 40 miles; a fourth from Gijon, on the coast of Asturias, south to Moveda, 25 miles. Other lines are projected to connect the capital with the frontiers of France and of Portugal. As yet there are no railways in operation in Portugal, except a line connecting Lisbon with Santarem and Tancos (75 miles).

Canals.—The numerous mountain-ranges which traverse the country and separate the principal river-basins, present insuperable obstacles to the junction of the rivers that flow into the Atlantic with those that discharge their waters into the Mediterranean; but several canals have been constructed along the banks of such rivers as are not navigable. The principal canals are the Imperial Canal, along the right bank of the Ebro; the canals of Castile, Manzanares, Murcia, Albacete, and Guadarama. There are no canals in Portugal, but the rivers of that country are more navigable than those of Spain.

Roads.—There are no good public roads in either country, except around Madrid; wheel-carriages are little used—the principal part of the transit trade being effected on the backs of mules.

26. **Foreign Possessions.**—Of the once magnificent colonies of Spain and Portugal the following are all that remain:—

SPANISH COLONIES.

	Area in Sq. Miles.	Population (1850.)
AFRICA.		
The Presidios (Ceuta, &c.) on the Barbary Coast,	20	14,071
Annabona, &c., in Gulf of Guinea,	...	3,000
WEST INDIES.		
Cuba,	32,800	1,449,462
Porto Rico,	3,750	380,000
Part of Virgin Isles,	12	2,600
OCEANIA.		
Part of the Philippine Islands,	52,148	2,679,500
Part of Ladrone Isles,	443	10,000
Total Colonies,	89,173	4,528,633
Spain, Balearic Isles, and Canaries,	182,708	16,301,851
Total Spanish Monarchy,	271,881	20,830,484

PORTUGUESE COLONIES.

	Area in Sq. Miles.	Population (1854.)
EUROPE.		
Azores,	700	237,916
AFRICA.		
Madeira and Porto Santo,	360	107,088
Cape Verd Islands,	1,680	85,393
Bissao, &c. (Senegambia),	27,000	1,095
St Thomas and Prince's Islands,	396	12,253
Congo, Angola, and Benguela,	153,000	665,157
Mozambique,	59,600	300,000
ASIA.		
Diu, Island and Fort, in Hindostán,	9	10,858
Damaum, do.	50	33,950
Goa, do.	1,060	115,571
Settlements in Solor, Timor, and Mindora (Malay Archipelago),	14,895	918,300
Macao,	9	29,587
Total Colonies,	258,399	2,756,379
Portugal,	35,268	3,499,121
Total Portuguese Monarchy,	293,967	6,255,500

FRANCE.

1. **Position and Boundaries.**—France, one of the largest and most important countries of Western Europe, is situated between lat. 42° 20′, and 51° 6′ N., and between lon. 4° 40′ W., and 8° 15′ E., and so occupies 8¾° of latitude, and nearly 13° of lon. The parallel of latitude which passes through its centre (46° 43′) extends eastward through the centre of Switzerland and Austria, the mouths of the Dnieper, Don, Volga, and Ural; and westward by Quebec, the southern shore of Lake Superior, and the mouth of the river Oregon. It is bounded on its six sides as follows:—On the N.W. by the English Channel, which separates it from Great Britain; on the W. by the Atlantic; on the S.W. by the Pyrenees, which separate it from Spain; on the S.E. by the Mediterranean; on the E. by Sardinia, Switzerland, and Baden, from which it is separated by the Alps, Mount Jura, and the Rhine; and on the N.E. by Bavaria, Prussia, and Belgium.

2. **Form and Dimensions.**—France is of a very compact form, resembling an irregular hexagon, the six sides of which are enumerated under par. 1. Its length from the west coast of Finistère to the mouth of the Var, near Nice, is 680 miles; breadth, from Givet in Ardennes to Mont Huromba in the Lower Pyrenees, 585 miles. The most northerly point is on the Belgian boundary, near Dunkerque; the most southerly, the source of the Tech in the Eastern Pyrenees; the most easterly, Lauterbourg on the Rhine; and the most westerly, Cape S. Mathieu in Finistère.

3. **Line of Coast.**—The aggregate length of the sides of the polygon above described is about 2000 miles, of which 1200 miles are sea-coast, and the remainder land frontier; but including the larger sinuosities, the seaboard amounts to 1500 miles, or 1 mile to every 133 square miles of surface. This is a small extent of coast-line for so extensive a country; but the numerous navigable rivers, and the canals connecting them, make ample compensation for the deficit.

4. **Area.**—Including Corsica, the area is 207,232 square miles, or 132,000,000 acres, being 3⅝ acres to each inhabitant. The British Isles are only ⅗ths the size of France; and France without Corsica is 2⅓ times the size of Great Britain.

5. **Population.**—In 1856 the population of France, including Corsica, was 36,069,059, being 174 persons per square mile; in 1836 it amounted to 33,540,908, showing an increase of only 7½ per cent in twenty years. While the population of Great Britain has more than doubled itself since the French Revolution, that of France has only increased 35 per cent; and for the last few years it has remained stationary, or has actually retrograded. Thus, in 1854 and 1855, the deaths exceeded the births. This remarkable fact is

mainly owing to war, political proscription, bad harvests, the grape-blight, disease of the silk-worm, and other causes; indeed, every natural or political calamity checks the increase of population in France in a marked manner. The north of France is more populous than the south, and contains a greater number of large towns. The most densely peopled department is that which contains the capital—having 6000 inhabitants to the square mile; and the least populous is Basses Alpes, which has only 60.

6. **Political Divisions.**—France was formerly divided into 34 Provinces; but in 1789, when the love of change became paramount, the provinces were divided into 85 Departments, or 86 including Corsica; and these were subdivided into 363 arrondissements, 2847 cantons, and 36,819 communes or parishes. Though the provinces are no longer recognised in legal documents, they are still familiar among the French people, and they are so frequently referred to in history that we think it necessary to append the following table (arranged in alphabetical order), showing their former capitals, and the departments which now correspond to them:—

OLD PROVINCES OF FRANCE.

PROVINCE.	Capital.	Corresponding Departments.
Alsace	Strasbourg	Haut Rhin, Bas Rhin.
Angoumois	Angoulême	Charente.
Anjou	Angers	Maine-et-Loire.
Artois	Arras	South-east part of Pas-de-Calais.
Aunis	Rochelle	Maritime part of Charente Inférieure.
Auvergne	Clermont	Puy-de-Dôme, Cantal.
Béarn	Pau	Basses Pyrénées.
Berry	Bourges	Cher, Indre.
Bourbonnais	Moulins	Allier.
Bourgogne	Dijon	Ain, Côte-d'Or, Seine-et-Loire, Yonne.
Bretagne	Rennes	Côtes-du-Nord, Finistère, Ille-et-Vilaine, Loire Inférieure, Morbihan.
Champagne	Troyes	Ardennes, Aube, Marne, Haute Marne.
Comté de Foix	Foix	Ariège, and Republic of Andorre.
Dauphiné	Grenoble	Hautes Alpes, Drôme, Isère.
Flandre	Lille	Nord.
Franche Comté	Besançon	Doubs, Jura, Haute Saône.
Gascogne, Guyenne	Auch, Bordeaux	Aveyron, Dordogne, Gers, Gironde, Lot, Lot-et-Garonne, Landes, Hautes Pyrénées, Tarn-et-Garonne.

OLD PROVINCES OF FRANCE (*continued.*)

PROVINCE.	Capital.	Corresponding Departments.
Isle de France	Paris	Oise, Seine, Seine-et-Oise, Seine-et-Marne, south part of Aisne.
Languedoc	Toulouse	Ardèche, Aude, Gard, Hérault, Haute Garonne, Haute Loire, Lozère, Tarn.
Limousin	Limoges	Corrèze, Haute Vienne.
Lorraine	Nancy	Meurthe, Meuse, Moselle, Vosges.
Lyonnais	Lyon	Loire, Rhone.
Maine	Le Mans	Mayenne, Sarthe.
Marche	Gueret	Creuse.
Nivernais	Nevers	Nièvre.
Normandie	Rouen	Calvados, Eure, Manche, Orne, Seine Inférieure, north part of Eure-et-Loire.
Orléanais	Orléans	Eure-et-Loire, Loiret, Loir-et-Cher.
Picardie	Amiens	Somme, maritime part of Pas-de-Calais, north of Aisne.
Poitou	Poitiers	Deux Sèvres, Vendée, Vienne.
Provence	Aix	Basses Alpes, Bouches-du-Rhône, Var, east part of Vaucluse.
Roussillon	Perpignan	Pyrénées Orientales.
Saintonge	Saintes	Eastern part of Charente Inférieure.
Comté d'Avignon	Avignon	Western part of Vaucluse.
Touraine	Tours	Indre-et-Loire.

The departments are named after the most important physical features which respectively characterise them—as the existence of a large river, the confluence of two rivers, or proximity to some mountain-chain. The departments are of much more uniform dimensions than the old provinces, or than the counties of Great Britain; their average size being 2400 square miles, or something less than Perthshire. But the department Gironde is larger than the largest of our Scottish counties (Inverness); while that of Seine, which contains the capital, and which is the smallest department in France, is larger than Rutland, the smallest county in England.

As the departments are so numerous, they must be arranged in a simple and methodical manner; and this is best done by dividing them into six frontier groups, corresponding with the six sides of the kingdom, together with a large central group. Then the 85 Continental departments can be easily remembered as follows:—14 North-western, 10 Western, 10 Southern, 10 South-eastern, 10 Eastern, 10 North-eastern, and 21 Central departments. In the six frontier groups the departments are taken *two deep* from the sea or other boundary.

FOURTEEN NORTH-WESTERN DEPARTMENTS.

Nord.*—LILLE 78, Roubaix 35, n., Tourcoing 28, n. (Deule), Bailleul 10, n. (Lys), Valenciennes 23, Cambrai 21 (Scheldt or Escaut), Douay 20 (Scarpe), Dunkerque 29 (Strait of Dover).

Towns between 5000 and 10,000 Inhabitants.— Wattrelos, Armentières, Estaire, Merville, Hazebrouck, Condé, Anzin, St Amand-les-Eaux, Solesmes, Le Cateau, Maubeuge, Bergues, Gravelines, Commines.

Pas-de-Calais.—ARRAS 25 (Scarpe), St Omer 22 (Aa), Calais 11, St Pierre 11 (Strait of Dover), Boulogne 30 (English Channel).

Aire, Ambleteuse, Carvin-Epinoy, Lens, Bethune, Agincourt.

Somme.—AMIENS 56, Abbeville 19 (Somme).

Cressy, Peronne.

Oise.—BEAUVAIS 14 (Terrein), Compiègne 10 (Oise).

Noyon, Senlis, Clermont.

Seine Inférieure.—ROUEN 103, Le Havre 64, Ingouville 14, Elbeuf 17 (Seine), Bolbec 10 (Bolbec), Dieppe 17 (Arques), Fecamp 11 (north coast).

Caudebec-les-Elbeuf, Darnetal, Yvetot, St Valery-en-Caux, Sotteville-les-Rouen.

Eure.—EVREUX 12 (Iton), Louviers 10 (Eure).

Andely, Vernon, Pont-Audemer, Bernay.

Eure-et-Loir.—CHARTRES 18 (Eure).

Dreux, Nogent-le-Rotrou, Chateaudun.

Calvados.—CAEN 45 (Orne), Honfleur 10 (Seine), Lisieux 11 (Touques).

Falaise, Bayeux, Vire.

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* Instead of giving the pronunciation of the different French words as they occur, it seems preferable to advance a few general rules:—

a has always the sound of *a* in mamma; *ai*, *ei*=*è*; *au*=*ō*.

e when unaccented is silent, like *e* final in English; *é*, with the *acute accent*, like the shut sound of *e* in English, as in *bed*: it has the same sound when followed by a silent *r* or *z* at the end of a word; *è*, with the *grave accent*, and *ê circumflex*=*e* in *there*.

eu, the same as *ö* in German, or *ao* in the Irish and Scottish Gaelic: as Eure, Evreux.

eau and *eaux*=long *ō* in English, as Chateau, Bordeaux (*Sha-tō'*, *Bor'dō*).

ou=*oo* in mood, or *u* in rule: as Angoulême (*An-goo-laim'*).

ç with a *cedilla*, used only before *a*, *o*, *u*=*s* in English: as Maçon (*Mas-so'*).

ch=English *sh*: as Rochelle, Chartres (*Ro-shel'*, *Shar'tr*).

g before *e*, *i*, and *y*, and *j*=*s* or *z* in *treasure*— thus Ariège, Jura (*Ar-ri-aish'*, *Zhu'ra*).

gn=*n* or *ni* in Spaniard: as Avignon, Boulogne (*Av-in'yong*, *Boo-loing'*).

d, *s*, *t*, *x*, *z*, are silent at the end of words: as Nord, Nîmes, Lot, Bordeaux, Rhodez (*Nōr*, *Neem*, *Lō*, *Bordō*, *Rhodd*).

an, *en*, *in*, *on*, have no representatives in English, and must be acquired from the teacher: they are strictly nasal sounds, faintly resembling *ang*, *eng*, *ing*, and *ong*, in English.

Orne.—ALENÇON 14 (Sarthe).

L'Aigle, Argentan, Seez, Flers, La Ferte Macé.

Manche.—ST LO 9 (Vire), Cherbourg 28 (Divette), Granville 11 (west coast).

Valognes, Coutances, Avranches.

Mayenne.—LAVAL 19, Mayenne 10 (Mayenne).

Chateau-Gontier, Ernée.

Ille-et-Vilaine.—RENNES 39 (Vilaine), St Malo 10, St Servan 10 (Rance).

Fougéres, Cancalle, Redon, Vitre, Fougeray, Combourg.

Côtes-du-Nord.—ST BRIEUC 14 (Gouet).

Dinan, Guingamp, Plouha, Lannion, Plouaret.

Finistère.—QUIMPER 10 (Odet), Morlaix 12 (Relec), Brest 61 (Elorn).

St Pol-de-Leon, Plougastel, Landerneau, Guipavas, Lambezellec, Crozon, Quimperlé.

TEN WESTERN DEPARTMENTS.

Morbihan.—VANNES 13 (Gulf of Morbihan), L'Orient 25 (Blavet).

Pontivy, Baud, Sarzeau, Grandchamp, Ploermel, Ploëmeur.

Loire Inférieure.—NANTES 108 (Loire).

Blain, Montoir, Vertou, Vallet, Vieillevigne.

Maine-et-Loire.—ANGERS 50 (confluence of Sarthe and Mayenne), Saumur 14 (Loire), Chollet 10 (Maine).

Chalonnes, Beaufort.

Vendée.—NAPOLÉON-VENDÉE, or BOURBON-VENDÉE 7.5 (Yon).

Sables d'Olonne, Noirmoutier, Fontenay, Luçon.

Deux Sèvres.—NIORT 18 (Sèvre Niortaise).

Parthenay.

Charente Inférieure.—LA ROCHELLE 16 (north-west coast), Rochefort 24, Saintes 11 (Charente).

St Jean d'Angely, St Pierre, Marennes.

Charente.—ANGOULÊME 21, Cognac 5.8 (Charente).

Gironde.—BORDEAUX 149 (Garonne), Libourne 12 (Dordogne).

Blaye, Bazas.

Dordogne.—PERIGUEUX 13 (Isle), Bergerac 10 (Dordogne).

Sarlat.

Lot-et-Garonne.—AGEN 16 (Garonne), Villeneuve d'Agen 13 (Lot).

Marmande, Tonneins, Nerac, Tournon.

TEN SOUTHERN DEPARTMENTS.

Landes.—MONT DE MARSAN 4 (Midouze).

St Esprit, Dax, Aire.

Basses Pyrénées.—PAU 16 (Gave de Pau), Bayonne 18 (Adour).
Orthez.

Hautes Pyrénées.—TARBES 14 (Adour).
Bagnères-en-Bigorre, Lourdes.

Gers.—AUCH 10 (Gers, tributary of Garonne).
Lectoure, Condom.

Haute Garonne.—TOULOUSE 103 (Garonne).
Grenade, Muret, St Gaudens, Revel, Villemur.

Ariège.—FOIX 4, Pamiers 7 (Ariège).
Mirepoix, St Girons.

Pyrénées Orientales.—PERPIGNAN 21 (Tet).

Aude.—CARCASSONNE 20, Narbonne 13 (Aude), Castelnaudary 10 (Fresquel).
Limoux.

Tarn.—ALBI 13 (Tarn), Castres 20 (Agout), Mazamet 9.9 (Arnette).
Rabastens, Gaillac, Lavaur, Graulhet, Puylaurens.

Tarn-et-Garonne.—MONTAUBAN 24.7, Moissac 10 (Tarn).
Castel-Sarrasin, St Antonin.

TEN SOUTH-EASTERN DEPARTMENTS.

Hérault.—MONTPELLIER 45 (Lez), Beziers 19, Bédarieux 10 (Orbe), Lodeve 11 (Lergue), Cette 19 (coast).
St Pons, Agde, Pezenas, Clermont, Meze, Lunel.

Lozère.—MENDE 7 (Lot).
Marvejols.

Gard.—NÎMES 53 (Vistre), Beaucaire 11 (Rhone and Gardon), Alais 18 (Gardon).
St Gilles, Le Pont St-Esprit, Uzès, Anduze, St Hippolyte, Le Vigan.

Ardèche.—PRIVAS 5 (Ouvese), Annonay 13 (Cance).
Tournon, Aubenas.

Drôme.—VALENCE 16 (Rhone), Romans 10 (Isère).
Montelimart, Crest.

Vaucluse.—AVIGNON 35 (Rhone), Carpentras 10 (Auzon), Orange 10 (Aigues).
L'Isle, Cavaillon, Apt.

Bouches-du-Rhone.—MARSEILLE 250 (Verne), Arles 23, Tarascon 12 (Rhone), Aix 27 (Arc).
St Remy, Salon, Martigues, Auban, Auriol, La Ciotat.

Var.—DRAGUIGNAN 9 (Artuby), Toulon 82 (south coast), Hières 10 (Gapeau), Grasse 11 (Esteron).
Lorgues, Brignolles, Cannes, Antibes.

Basses Alpes.—DIGNE 4.8 (Bleone, tributary of the Durance).
Manosque, Sisteron.

Hautes Alpes.—GAP 8.7 (Line, tributary of the Durance).
Embrun, Briançon.

TEN EASTERN DEPARTMENTS.

Isère.—GRENOBLE 31 (Isère), Vienne 20 (Rhone).
Voiron.

Rhone.—LYON 292 (Rhone and Saône), Tarare 10 (Tardine).
Villefranche.

Ain.—BOURG 12 (Reyssouse).
Belley.

Saône-et-Loire.—MAÇON 14, Chalons-sur-Saône 16.5 (Saône), Autun 12 (Arroux).
Tournus.

Jura.—LONS-DE-SAULNIER 9 (Vaillère), Dôle 10 (Doubs).
Arbois, Poligny, Salins, St Claude.

Doubs.—BESANÇON 41 (Doubs).
Montbelliard, Pontarlier.

Haute Saône.—VESOUL 6 (Drejon).
Gray, Lure.

Vosges.—EPINAL 11 (Moselle).
St Diey, Mirecourt, Remiremont, Gerardmer.

Haut Rhin.—COLMAR 21 (Lauch), Mulhausen 29 (Ill), St Marie-aux-Mines 11 (Liepvrette).
Belfort, Thann.

Bas Rhin.—STRASBOURG 77 (Rhine), Haguenau 11 (Moder), Schelestadt 10 (Ill).
Saverne, Oberheim, Bischwiller.

TEN NORTH-EASTERN DEPARTMENTS.

Moselle.—METZ 64 (Moselle and Seille).
Thionville, Sarreguemines.

Meurthe.—NANCY 40 (Moselle and Meurthe), Lunéville 15 (Meurthe).
Pont-à-Mousson, Toul, Phalsbourg.

Meuse.—BAR-LE-DUC 14 (Ornain, tributary of the Marne), Verdun 13 (Meuse).
St Mihiel.

Haute Marne.—CHAUMONT 6, Langres 11 (Marne).
St Dizier.

Marne.—CHALONS-SUR-MARNE 15 (Marne), Reims 45 (Vêle, tributary of the Aisne).

Epernay, Vitry.

Ardennes.—MEZIÈRES 5, Charleville 9, Sedan 16 (Meuse).

Givet, Rethel.

Aisne.—LAON 10 (Delette, tributary of the Oise), St Quentin 25 (Somme), Soissons 9 (Aisne).

Chauny, Chateau-Thierry.

Seine-et-Marne.—MELUN 10, Fontainebleau 10 (Seine), Meaux 10 (Marne).

Provins, Montereau.

Seine-et-Oise.—VERSAILLES 35, St Germain-en-Laye 12 (Seine).

Sèvres, Corbeil, Pontoise, Etamps.

Seine.—PARIS 1178, St Denis 15 (Seine).

Vincennes, Boulogne.

TWENTY-ONE CENTRAL DEPARTMENTS.

Sarthe.—LE MANS 27 (Sarthe).

Sable, La Flèche, Bonnetable, Mamers.

Indre-et-Loire.—TOURS 33 (Loire and Cher).

Amboise, Chinon.

Loir-et-Cher.—BLOIS 17 (Loire), Vendôme 9 (Loir).

Romorantin, Selles-sur-Cher.

Loiret.—ORLEANS 47 (Loire).

Beaugency, Gien, Montargis.

Yonne.—AUXERRE 14, Sens 10 (Yonne).

Villeneuve-le-Roi, Joigny, Tonnerre, Avallon.

Aube.—TROYES 27 (Seine).

Bar-sur-Aube.

Vienne.—POITIERS 29 (Clain), Chatellerault 12 (Vienne).

Montmorillon, Loudun.

Indre.—CHATEAUROUX 15 (Indre), Issoudun 13 (Theols, tributary of the Cher).

Buzançais, La Châtre, Le Blanc, Argenton.

Cher.—BOURGES 25 (Auron, tributary of the Cher).

Vierzon, St Amand.

Nièvre.—NEVERS 17 (Loire).

Cosne, La Charité, Clamecy.

Côte-d'Or.—DIJON 32 (Ouche), Beaune 11 (Bouzoire, tributary of the Saône).

Auxonne, Chatillon-sur-Seine.

Haute Vienne.—LIMOGES 41 (Vienne).

St Junieu, St Leonard, St Yrieix.

Creuse.—GUERET 5 (Creuse).

Aubusson.

Allier.—MOULINS 17 (Allier), Montluçon 9 (Cher).

St Pourçain, Gannat, Cusset.

Corrèze.—TULLE 11, Brives 9 (Corrèze).

Allassac, Ussel.

Puy-de-Dôme.—CLERMONT-FERRAND 33 n. (Allier), Riom 12 (Ambene), Thiers 14 (Dore).

Ambert, Issoire.

Loire.—MONTBRISON 8 n., Roanne 13 (Loire), St Etienne 94 (Furens), Rive-de-Gier 13 (Gier, tributary of the Rhone).

St Chamond.

Lot.—CAHORS 13 (Lot).

Figeac, Gourdon.

Cantal.—AURILLAC 10 (Cere, tributary of the Dordogne).

St Flour.

Haute Loire.—LE PUY 15 (Loire).

Yssingeaux, Tence, Brioude.

Aveyron.—RHODEZ 10, Villefranche 9.5 (Aveyron), Milhau 10 (Tarn).

St Afrique.

Corsica.—AJACCIO 12 (west coast), Bastia 16 (north-east coast).

7. Descriptive Notes.—DEPARTMENTS AND TOWNS.

THE FOURTEEN NORTH-WESTERN DEPARTMENTS.—Of the seven groups above enumerated, the north-western is by far the most populous, having forty-three towns of more than 10,000 inhabitants; eighteen towns of more than 20,000; five above 50,000 (Lille, Amiens, Le Havre, Rouen, and Brest); one at 100,000 (Rouen); and sixty-eight towns between 5000 and 10,000.

Lille, a strongly-fortified city on the Belgian frontier, one of the chief seats of the cotton, linen, and woollen manufactures. *Roubaix, Tourcoing*, and *Bailleul*, important manufacturing towns. *Valenciennes*, a strongly-fortified manufacturing town, and the birthplace of Froissart in 1337. *Cambrai*, also fortified, and long famous for its *cambrics*. *Douay* has a national college and numerous scientific institutions. *Dunkerque*, a strongly-fortified seaport, and the most northerly town in France. *Arras, St Omer, Calais*, and *Boulogne*, are all strongly fortified, and engaged in various manufactures: the infamous Robespierre was a native of Arras. *Calais* is the nearest city in France to the English shores, and is celebrated in the wars between the two countries; and *Boulogne* is the residence of many English families. *Agincourt*, famous for the great victory obtained by Henry V. over a greatly superior French force in 1415. *Amiens*, the birthplace of Peter the Hermit, Du

Cange, and Delambre: here was signed the treaty of peace between Britain and France in 1802. *Abbeville*, a fortified town, with numerous manufactures. *Cressy*, famous for the victory obtained by Edward III. over the French in 1346. *Rouen*, one of the most populous and flourishing cities in the north of France, celebrated for spinning and dyeing woollen and cotton stuffs; has a magnificent Gothic cathedral built by William the Conqueror, and a statue of the celebrated Joan of Arc, who was burnt to death here in 1431. *Le Havre* and *Rouen* are the two great seaports of Paris, with which they are connected by the Seine. *Ingouville*, engaged in chemical works and sugar-refining. *Elbeuf* is one of the chief seats of the woollen manufacture. *Dieppe* is the packet station to Brighton. *Beauvais*, famous for its cloth and tapestry. *Compiègne*, with a fine royal palace. *Evreux* has one of the finest cathedrals in France. *Chartres*, once the capital of Celtic Gaul, is the centre of a great corn-trade. *Caen*, a large manufacturing town famous for its lace, contains the tomb of William the Conqueror. *Alençon*, celebrated for lace and for crystal diamonds. *Cherbourg*, the Sebastopol of France, and one of her principal naval stations, situated at the northern extremity of the peninsula of Cotentin, within sight of the English coast; the works, long in progress, and now mounting 3000 guns, were formally opened on the 4th August 1858 by Napoleon III., in presence of Queen Victoria and a powerful English fleet. *Laval*, a large trading-town. *Rennes*, the ancient capital of Brittany, is liable to inundations from the Vilaine. *St Malo*, the birthplace of Jacques Cartier, the discoverer of Canada. *St Brieuc*, extensively engaged in the Newfoundland cod-fishery: and *Quimper*, with a large pilchard-fishery. *Brest*, the principal station of the French navy, is strongly fortified and difficult of access.

THE TEN WESTERN DEPARTMENTS contain forty-six towns of above 5000 inhabitants; eighteen above 10,000; four above 20,000; three above 50,000—viz. Nantes, Angers, Bordeaux; one above 100,000—viz. Bordeaux.

Vannes, a seaport town, with a brisk coasting-trade. *L'Orient*, one of the five principal stations of the French navy, with extensive shipbuilding. *Nantes*, one of the largest and most commercial cities in the west of France, with extensive shipbuilding docks: here was issued the famous Edict of Nantes, granting important privileges to the French Protestants, in 1598. *Angers*, the former capital of Anjou, with various manufactures, and extensive slate-quarries in the neighbourhood. *Saumur*, a stronghold of the French Protestants in the sixteenth century. *Niort*, a thriving commercial and manufacturing town. *La Rochelle*, memorable for the siege which the Huguenots sustained against Louis XIII. in 1627, is a strongly-fortified seaport town. *Rochefort*, an important naval station, is the third military port in France. *Angoulême*, the former capital of Angoumois, has extensive trade, and is the birthplace of Montalembert, Balzac, and Margaret de Valois. *Cognac*, famous for its brandy, which is largely exported. *Bordeaux*, the largest and most important city in the west of France, is the great emporium of the wine trade, and one of the principal seats of its foreign commerce. *Agen*, with a trade in prunes, is an entrepôt for the trade between Bordeaux and Toulouse.

THE TEN SOUTHERN DEPARTMENTS contain forty-one towns of above 5000 inhabitants; fourteen above 10,000; five above 20,000; and one above 100,000—viz. Toulouse.

Pau, the capital of the old province of Béarn, is the birthplace of Henry IV., of Gaston de Foix, and of General Bernadotte, afterwards King of Sweden. *Bayonne*, a strongly fortified seaport, in the extreme south-west of the kingdom, carries on an important trade with Spain: the *bayonet* was invented here. *Tarbes* maintains an active trade in horses. *Toulouse*, the most important and populous city in the entire south of France, was the capital of Languedoc; it is a sort of southern capital for literature and science, and contains the principal cannon-foundry in France: near it took place a sanguinary battle, in 1814, between Wellington and Marshal Soult. *Perpignan*, the former capital of Roussillon, has an extensive commerce in wines, wool, silk, iron, and corks. *Carcassonne* maintains an active trade in brandy, and has several important manufactures. *Narbonne*, a very ancient city, founded by the first Roman colony sent into Gaul, was the residence of several Saracen kings in the middle ages: it is now celebrated for its honey. *Albi*—it was from this town that the Albigenses of the middle ages, who were so cruelly persecuted by the Church of Rome for their zealous maintenance of gospel truth, derived their name. *Castres*, a place of great trade, manufactures, and mining operations, was one of the first cities in France that embraced the doctrines of Calvin—the birthplace of Dacier and Rapin. *Montauban*, a large, well-built town, with several manufactures, and the seat of a Protestant theological seminary.

THE TEN SOUTH-EASTERN DEPARTMENTS contain fifty-nine towns of more than 5000 inhabitants; twenty-six above 10,000; six above 20,000; three above 50,000—viz. Nîmes, Toulon, and Marseille; and one (Marseille) above 100,000.

Montpellier, one of the finest cities in the south-east of France, with many literary and scientific institutions which rival those of Toulouse. *Beziers*, a fine town built on a hill, near the Orbe, suffered much during the crusade against the Albigenses in the thirteenth century. *Cette*, a fortified seaport town, at the entrance of the Canal du Midi. *Mende* has considerable manufactures of coarse cloth. *Nîmes*, a large thriving commercial city, with numerous manufactures of silk, cotton, and woollen goods, is the birthplace of Nicot, who introduced tobacco into France. *Beaucaire* has an immense annual fair, where all kinds of merchandise may be found, and is frequented by merchants from all parts of Europe and Asia. *Alais*, situated on a coal-field, has numerous manufactures. *Annonay*, the centre of a great paper-manufactory, is the birthplace of Montgolfier and Boissy d'Anglas. *Valence* is noted for its cotton-printing and manufacture of silk goods. *Romans*, noted for its extensive culture of mulberry-trees and for its silk-manufactures. *Avignon*, a flourishing manufacturing and trading town, surrounded by plantations of mulberry-trees, was the residence of the Roman pontiffs between 1329 and 1377. *Carpentras*, noted for its brandy distilleries. *Orange*, remarkable for its numerous Roman antiquities, gives the title of Prince of Orange to the King of the Netherlands. *Marseille*, the ancient *Massilia*, founded by Greek colonists B.C. 600, is a very large and highly flourishing city, and the third in France in regard to population: its commerce in wines and fruits extends to all parts of the world; was long celebrated for the cultivation of letters and arts, and has still a great number of literary institutions. *Arles*, distinguished for its interesting Roman remains. *Aix*, with a hot saline spring, and trade in fruits and olive-oil. *Toulon*, a strongly fortified city, is the great naval arsenal of the south of France; and here Napoleon I. commenced his military career. *Briançon*, the most elevated town in Europe, and one of the strongest fortresses in the world.

THE TEN EASTERN DEPARTMENTS contain forty towns of above 5000 inhabitants; nineteen above 10,000; seven above 20,000; two above 50,000 (Lyon and Strasbourg); one above 100,000 (Lyon).

Grenoble, a fortified city on the Isère, formerly the capital of Dauphiné, carries on an active trade in gloves and liqueurs. *Vienne*, a thriving town, with numerous branches of industry, and having lead and silver mines in the vicinity. *Lyon*, at the confluence of the Rhone and Saône, is the second city in France in regard to population and commercial importance; it was founded by the Proconsul Planeus, B.C. 43; became the capital of Celtic Gaul, and afterwards of the province Lyonnais; has numerous manufactures—that of silk being the most celebrated; and contains the finest provincial library in France: was the birthplace of Germanicus, of the emperors C. Aurelius and Caracalla, of the botanist Jussieu, of Jacquard and Camille Jourdan. *Bourg*, the birthplace of Lalande. *Maçon*, the centre of an extensive wine-trade, has numerous Roman remains. *Chalons-sur-Saône*, at the head of the Canal-du-Centre, carries on an extensive inland trade. *Autun*, the *Bibracte* of Julius Cæsar, was for a time the diocese of the celebrated Talleyrand. *Lons-le-Saulnier*, so named from its famous saline spring, which yields annually 20,000 quintals of salt. *Besançon*, a strongly fortified city on the Doubs, celebrated for its clocks and watches. *Épinal*, with manufactures of lace and embroidery. *Colmar*, the fifth city in France as regards the cotton manufacture. *Mulhausen*, once the capital of a small republic, is noted for its printed cottons and silks. *Strasbourg*, a populous and strongly fortified city, at the confluence of the Rhine and Ill, was formerly a free imperial city of Germany; it became subject to France in 1681, and then became the capital of Alsace: it has a celebrated cathedral (founded in 504, but not finished till the fifteenth century), with a spire 466 feet high, which contains a remarkable astronomical clock, representing the movements of the planets in the solar system.

THE TEN NORTH-EASTERN DEPARTMENTS contain forty-three towns of above 5000 inhabitants; eighteen above 10,000; six above 20,000; two above 50,000 (Paris and Metz); and one (the capital) above 100,000.

Metz, at the confluence of the Moselle and Seille, is strongly fortified, and contains an arsenal of 180,000 stand of arms: in the sixteenth century it was a free imperial city, under the protection of Germany. *Nancy*, at the confluence of the Moselle and Meurthe, has extensive manufactures of cloth and embroidered muslin. *Lunéville*, long the residence of Stanislaus, king of Poland, is chiefly famous for the treaty executed here in 1801 between the Emperor of Germany and the first Napoleon. *Bar-le-Duc* carries on an active trade in timber, wine, oil, and wool. *Verdun*, where the Meuse becomes navigable, though strongly fortified, was stormed and taken by the Prussians in 1792. *Langres*, the principal seat of the manufacture of cutlery. *Chalons-sur-Marne*, with a celebrated school of arts and various scientific collections. *Reims*, the principal seat of the woollen manufacture, is renowned in history for the maintenance of its liberties against the bishops in the middle ages: many ecclesiastical councils were held here, and in its colossal cathedral many of the kings of France were crowned. *Sedan*, long an independent principality, was united to France under Louis XIII., and was the seat of a celebrated Protestant university till the revocation of the Edict of Nantes. *Laon:* here was fought a sanguinary battle between Napoleon I. and the Allies under Blucher, in 1814. *Fontainebleau:* its ancient royal palace was long the favourite residence of the kings of France. *Versailles*, famous for its magnificent royal palace, one of the most gorgeous in the world: many famous treaties were signed here, at one of which, in 1783, England recognised the independence of the United States of America.

Paris, the capital of France, and the second largest city in Europe, is situated on both banks of the Seine, about 100 miles from its mouth. Less than half the size of London, it far surpasses the latter in magnificence, and is regarded by all as the most splendid city in Europe. It is surrounded by a fortified wall and a series of forts, erected by Louis Philippe at an enormous expense; and is adorned by sumptuous palaces, magnificent churches, and other public buildings, by fountains, gardens, triumphal arches, and columns. The University has twenty-eight professors, and the National Library contains 1,400,000 printed works and pamphlets, besides 125,000 MS. volumes. Paris is the birthplace of Condé, Prince Eugène, J. B. Rousseau, de Thou, Molière, Boileau, Voltaire, Rollin, d'Alembert, and the painters Lebrun and David.

THE TWENTY-ONE CENTRAL DEPARTMENTS contain eighty-two towns of above 5000 inhabitants; thirty-two above 10,000; ten above 20,000; and one above 50,000 (St Étienne).

Le Mans, with a brisk trade in grain and various manufactures. *Tours*, the former capital of Touraine, at the confluence of the Loire and Cher, with silk-manufactures, and numerous schools and learned societies. *Blois*, with great trade in Orléans brandy. *Orléans*, the former capital of Orléannais, and at one time the capital of the kingdom of Burgundy, was besieged by the English in 1428, and delivered by the celebrated Joan of Arc, hence called "The Maid of Orléans." *Auxerre* and *Sens* are extensively engaged in the wine trade. *Troyes*, the former capital of Champagne, is the centre of several important manufactures: here a treaty was concluded in 1420, conferring the crown of France on the King of England. *Poitiers*, formerly capital of Poitou, was in the possession of England for three centuries. *Chatellerault* gives the title of duke to the (Scotch) Duke of Hamilton. *Chateauroux* has extensive manufactures of cloth, cutlery, hats, &c. *Bourges*, former capital of Berry, contains one of the finest Gothic cathedrals in Europe. *Nevers*, former capital of Nivernais, has important manufactures of iron and steel goods. *Dijon*, the principal market for the sale of Burgundy wines, was formerly the capital of Bourgogne. *Limoges*, the former capital of Limousin, noted for its horse-races and its woollen manufactures. *Moulins*, formerly capital of Bourbonnais, with tanneries and manufactures of cutlery. *Tulle*, contains a national factory of firearms. *Clermont-Ferrand*, near the lofty mountain Puy-de-Dôme, and in the centre of a volcanic region. *Riom*, noted for being paved with basalt and lava quarried in the neighbourhood. *Thiers* has extensive manufactures of cutlery, paper, and candles. *Roanne:* here the Loire becomes navigable. *St Étienne*, a large thriving city, surrounded by coal-mines, and containing an active industrious population, who are largely engaged in the manufacture of firearms and iron-ware. *Cahors* carries on a large trade in tobacco and red wines. *Le Puy* is celebrated for its cathedral, containing a small image of the Virgin, which the inhabitants devoutly worship under the appellation of "Our Lady of Puy." *Villefranche de Rouarque* has numerous copper, iron, and brass works. *Ajaccio,* the capital of Corsica, and the birthplace of Napoleon I. in 1769, carries on a trade in wine, oil, and coral. *Bastia,* the former capital, is a fortified seaport town, with various manufactures, especially leather, soap, and liqueurs.

8. **Capes.**—The following are the principal: Cape Gris-Nez (pronounced Grëenay), in Pas-de-Calais, the nearest point to England; La Have, at the mouth of the Seine; Barfleur and La Hague, in the north of Manche; Point St Matthieu and Raz Point in the west of Finistère; Couquet, the extremity of the peninsula of Quiberon, in Morbihan; Sicie, near Toulon, in department Var.

9. **Islands.**—Ushant and Belle Isle, S. of Morbihan; Noirmoutier and Isle-de-Yeu, W. of Vendée; Ré and Oleron, W. of Charente Inférieure; Hières, two islands in the Mediterranean, S. of Var; Lerins, S.E. of Var; Corsica, a large island, between France and Italy, now forming one of the French departments.

10. **Gulfs, Bays, and Straits.**—Pas-de-Calais, or Strait of Dover, 20 miles wide, between Picardy and Kent; Estuaries of the Somme and Seine; Bay of St Malo, between Manche and Côtes-du-Nord; Passage-du-Four, between Finistère and Ushant; Douarnenez Bay, W. of Finistère; Morbihan Bay, and Estuary of the Vilaine, S. of Morbihan; Estuary of the Loire, and Bourgneuf Bay, W. of Loire Inférieure; Strait of Breton, and Strait of Antioche, between Charente Inférieure and the islands Ré and Oleron; Estuary of the Gironde, between Charente-Inférieure and Gironde; Bay of Biscay, or Golfe de Gascogne, between the W. of France and N.W. of Spain; Gulf of Lions (*Golfe du Lion*), S.E. of France; Gulf of Nice, between Var and Piedmont.

11. **Mountain System.**—For the relation of the mountains of France to the general mountain system of Europe, see p. 73. They all belong either to the Hesperian, or to the great Alpine system, and are naturally divided into seven groups.

The *Pyrenees*, between France and Spain, belong for the most part to the latter country, which also contains the highest summit—

	Feet.
Pic Nethou, ...	11,168
Mont Perdu, in the Hautes-Pyrenees, the highest summit of the Pyrenees in France, . .	10,994
Mont Midi, in Basses Pyrenées, . . .	9,438
Elevation of snow-line in the Pyrenees, .	8,000

The *Alps*, between France and Italy, belong chiefly to Piedmont, Savoy, and Switzerland. Highest summit—

	Feet.
Mont Blanc, in Savoy, ...	15,744
Elevation of snow-line on do., . .	8,900

The highest French summits are—

	Feet.
Mont Pelvoux, between Hautes-Alpes and Isère,	14,108
Mont Viso, in the E. of Hautes-Alpes, . .	13,600
Mont Genèvre, same department, . .	11,785

Jura Chain, between Franche Comté and Switzerland, forming a continuation of the Alps proper, and separating the basins of the Rhone and Seine.

	Feet.
Mont Reculet, in Ain, ...	5,643
Mont Molleson, ...	6,588

Vosges, a continuation of the Jura Chain, between Lorraine and Alsace, separating the Rhine from its affluent the Moselle, and giving rise to the Saône, Aube, Marne, Meuse, and Moselle. Highest summits—

	Feet.
Ballon de Guebwiller, in Haute-Rhin, . .	4,690
Ballon d'Alsace, ...	4,688

Côte d'Or, connecting the Vosges Mountains with the Cevennes, and separating the basin of the Saône from those of the Seine and Loire.

	Feet.
Le Tasselot, ...	1,968

Cevennes, a continuation of the Vosges and Côte d'Or, run S.S.W. from the Canal du Centre, near Chalons, to the Canal du Midi, near Carcassonne, and separate the basins of the Rhone and Saône from those of the Loire and Garonne.

	Feet.	
Mont Mezin, ...	5,794,	in Ardèche.
Mont Lozère, ...	4,884,	in Lozère.

Auvergne Mountains, a branch of the Cevennes, in Puy-de-Dôme and Cantal, separating the basin of the Loire from that of the Dordogne and Garonne, are of volcanic origin. Highest summits—

	Feet.
Puy-de-Sancy, in Mont Dor, . . .	6,220
Cantal, ...	6,093
Puy-de-Dôme, ...	4,800

12. **Principal River-Basins.**—Of the numerous river-basins of France, only 12 are of great magnitude. The best authorities are greatly at variance in estimating the areas; and in some cases we can only make an approximation. It appears that the 12 basins here given comprise $\frac{4}{5}$ths of the whole area of France, and 72 out of the 85 capitals, being $\frac{6}{7}$ths of the entire number, leaving 14 capitals to be otherwise accounted for—viz. Caen, St Lo, St Brieuc, Quimper, Vannes, Napoléon-Vendée, Niort, Rochelle, Carcassonne, Montpellier, Nîmes, Marseille, and Draguignan. Omitting the 5 basins which contain 1 capital each,

the remaining 7 contain 65 capitals, or about ¾ths of the whole number, and their combined area (144,000 square miles) the same proportion of the entire area of France.

River.	Length in Miles.	Area in Sq. Miles.	Capitals.
Somme,......	115	5,000	Amiens.
Seine, ...	470	26,000	Rouen, Versailles, PARIS, Melun, Troyes, Chartres, Evreux, Beauvais, Laon, Chalons, Chaumont, Bar-le-Duc, Auxerre.
Vilaine, ...	130	4,500	Rennes.
Loire, ...	530	48,000	Nantes, Angers, Tours, Blois, Orléans, Nevers, Montbrison, Le Puy, Laval, Le Mans, Alençon, Limoges, Gueret, Poitiers, Chateauroux, Bourges, Moulins, Clermont-Ferrand.
Charente,...	248	3,700	Angoulême.
Gironde, ...	465	24,450	Perigueux, Tulle, Aurillac, Bordeaux, Agen, Toulouse, Cahors, Mende, Auch, Montauban, Rhodez, Foix.
Adour, ...	170	6,500	Tarbes, Pau, Mont-de-Marsang.
Thet,.........	75	1,000	Perpignan.
Rhone, ...	534	28,160	Avignon, Valence, Lyon, Gap, Digne, Privas, Grenoble, Maçon, Bourg, Lons-le-Saulnier, Besançon, Dijon, Vesoul.
In France,	322	25,000	
Rhine, ...	600	Whole 65,000; in France, 14,000	Strasbourg, Metz, Nancy, Epinal, Colmar.
In France,	167		
Meuse, ...	434		Mezières.
In France,	150		
Scheldt, ...	200		Lille, Arras.
In France,	60		
		158,150	

13. **Table of Rivers and Towns.**—The plan of this table is the same as in the corresponding tables of the British Isles. France contains 424 towns of 5000 inhabitants and upwards, all of which are here given, along with their actual position on the rivers on which they stand. There are 180 large towns (by which is here meant those containing 10,000 or more inhabitants), and 244 small towns, or those ranging from 5000 to 10,000 inhabitants. The former appear in Roman letters, and the latter in *Italics*, while the capitals of departments are given in SMALL CAPITALS. The 424 towns referred to stand on 210 rivers, of which 52 enter the sea immediately, the rest being tributary streams. The Rhine, Meuse, and Scheldt will appear in their full development under the countries to which

they more properly belong, the portions of them flowing through France being all that can be noticed here. There are 56 towns in France that contain upwards of 20,000 inhabitants, of which 14 exceed 50,000, and only 5 (Paris, Marseille, Lyon, Bordeaux, and Rouen) amount to 100,000.

Basins inclined to the English Channel.

Rivers.	*Towns.*
Strait of Dover,	Dunkerque, Calais, Ambleteuse.
Colme,	*Bergues.*
Aa	*Gravelines,* St Omer.
Lianne	Boulogne.
Somme	Abbeville, AMIENS, *Peronne,* St Quentin.
Maye,	*Cressy.*
Arques,	Dieppe.
Durdan,	*Yvetôt.*
Co. Seine-Inférieure,	Fecamp.
Seine,	Le Havre, Ingouville, *Honfleur,* ROUEN, Elbeuf, *Andely, Vernon,* St Germain-en-Laye, St Denis, VERSAILLES, n., PARIS, *Sèvres, Corbeil,* MELUN, Fontainebleau, Montereau, TROYES, *Chatillon-sur-Seine.*
Bolbec,	Bolbec.
Rille, *l*	*Pont-Audemer, L'Aigle.*
Charentonne, *l*	*Bernay.*
Aubette,	*Darnetal.*
Eure, *l*	Louviers, CHARTRES.
Iton, *l*	EVREUX.
Blaise,	*Dreux.*
Epte,	*Vernon.*
Oise,	*Pontoise,* Compiègne, *Noyon, Chauny.*
Nonette, *l*	*Senlis.*
Terrein,	BEAUVAIS.
Bresches,	*Clermont.*
Aisne, *l*	Soissons, *Rethel.*
Vèle, *l*	*Reims.*
Delette, *l*	LAON.
Marne,	PARIS, *Vincennes,* n., *Meaux, Chateau-Thierry, Epernay,* CHALONS-sur-Marne, *Vitry, St Dizier,* CHAUMONT, Langres.
Ornain	BAR-LE-DUC.
Essonne, *l*	*Corbeil.*
Juine, *l*	*Etampes.*
Loing, *l*	*Montargis.*
Yonne, *l*	*Montereau,* Sens, *Villeneuve,* Joigny, AUXERRE, *Clamecy.*
Armançon,	*Tonnerre.*
Voisin,	*Avallon.*
Vouzie,	*Provins.*
Aube,	*Bar-sur-Aube.*
Touques,	Lisieux.

Basins inclined to the English Channel (continued).

Rivers.	*Towns.*
Dives,	*Falaise*, n.
Ante, *l*	*Falaise.*
Orne,	CAEN, *Argentan*, *Seez.*
Vere, *l*	*Flers.*
Drôme,	*Bayeux*, n. (on the Aure, a right-hand trib.)
Vire,	ST LO, *Vire.*
Douve,	*Valogne*, n. (on the Merderet, l. t.)
Divette,	Cherbourg.
Sienne,	*Coutances*, n. (on the Soulle, r. t.)
Bosq,	Granville.
Seez,	*Avranches.*
Couesnon,	*Fougères.*
Co. Ille-et-Vilaine,	*Cancalle.*
Rance,	St Malo, St Servan, *Dinan.*
Gouet,	ST BRIEUC.
Co. Côtes-du-Nord,	*Plouha.*
Trieux,	*Guingamp.*
Guer,	*Lannion*, *Plouaret.*
Relec,	*St Pol-de-Leon*, Morlaix.

Basins inclined to the Atlantic.

Elorn,	Brest, *Plougastel*, Guipavas, *Lambezellac*, *Landerneau.*
Odet,	QUIMPER.
Quimperlé,	*Quimperlé.*
Blavet,	L'Orient, *Pontivy.*
Evel, *l*	*Baud.*
Co. Morbihan	VANNES, Sarzeau, Grandchamp, n.
Vilaine,	*Redon*, RENNES, *Vitre.*
Isaac, *l*	*Blain.*
Oust,	*Redon.*
Duc, *l*	*Ploermel.*
Cher, *l*	*Fougeray.*
Ille,	*Combourg.*
Loire,	*Montoir*, NANTES, *Chalonne*, ANGERS, n., *Beaufort*, Saumur, TOURS, *Amboise*, BLOIS, *Beaugency*, ORLEANS, *Gien*, *Cosne*, *La Charité*, NEVERS, Roanne, MONTBRISON, St Etienne, n., LE PUY.
Achenau, *l*	*Vieillevigne*, n. (on the Ognon, r. t.)
Sèvre Nantaise, *l*	NANTES, *Verton.*
Moine,	Chollet.
Divale, *l*	*Vallet.*
Layon, *l*	Chalonne.
Mayenne,	ANGERS, *Chateau-Gontier*, LAVAL, Mayenne, *La-Fertê Macê.*
Ernée,	*Ernée.*
Sarthe,	ANGERS, *Sable*, LE MANS, ALENÇON.
Loir,	*La Flèche*, *Vendôme*, Chateaudun.

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
L'Huine,	*Nogent-le-Rotrou.*
Dive, *l*	*Bonnetable, Mamers.*
Thouet, *l*	*Parthenay.*
Argentan, *l*	*Argentan.*
Vienne, *l*	*Chinon,* Chatellerault, *St Junien,* LIMOGES, *St Leonard.*
Creuse,	*Le Blanc,* Argentan-sur-Creuse, GUERET, *Aubusson.*
Gartempe, *l*	*Montmorillon.*
Clain, *l*	POITIERS.
Indre, *l*	*Buzançois,* CHATEAUROUX, *La Chartre.*
Cher, *l*	TOURS, *Selles, Vierzon, St Amand, Montluçon.*
Sauldre,	*Romorantin.*
Aron, *l*	Issoudun, n. (on the Theols, l. t.)
Auron,	BOURGES.
Allier, *l*	MOULINS, CLERMONT - FERRAND, *Issoire, Brioude.*
Sioule, *l*	*St Pourçain.*
Andelot, *l*	*Gannat.*
Sichon,	*Cusset.*
Dore,	Thiers, *Ambert.*
Ambene, *l*	Riom.
Arroux,	Autun.
Furens,	St Etienne.
Lignon,	*Yssingeaux, Tence.*
Co. Vendée,	*Sable-d'Olonne.*
Lay,	*Luçon,* n.
Yon,	NAPOLEON-VENDEE.
Sèvre Niortaise,	NIORT.
Vendée,	*Fontenay.*
Co.Charente-Inférieure,	LA ROCHELLE.
Charente,	Rochfort, Saintes, *Cognac,* ANGOULÊME.
Boutonne,	*St Jean d'Angely.*
Seudre,	*Marennes.*
Dordogne,	Libourne, Bergerac.
Isle,	PERIGUEUX.
Loue, *l*	*St Yrieix.*
Vezère,	*Montignac, Allassac.*
Corrèze, *l*	*Brives,* TULLE.
Ceon, *l*	*Gourdon.*
Sarlat,	Sarlat.
Cere, *l*	AURILLAC.
Garonne,	BORDEAUX, *Marmande, Tonneins,* AGEN, *Castel - Sarrasin, Grenade,* TOULOUSE, *Muret, St Gaudens.*
Beuve, *l*	*Bazas.*
Avance, *l*	*Marmande.*
Lot,	Villeneuve d'Agen, CAHORS, MENDE.
Baudusson, *l*	*Tournon.*
Celle,	*Figeac.*

Basins inclined to the Atlantic (continued).

Rivers.	*Towns.*
Trueyn, *l*	*St Flour*, n. (on the Lende, r. t.)
Coulagues,	*Marvejols.*
Bayse, *l*	*Nerac, Condom.*
Gers, *l*	*Lectoure*, AUCH.
Tarn,	Moissac, MONTAUBAN, *Villemur, Rabastens, Gaillac*, ALBI, Milhau.
Aveyron,	*St Antonin*, Villefranche, RHODEZ.
Agout, *l*	*Lavaur*, Castres.
Adou,	*Graulhet.*
Sor, *l*	*Revel.*
Larn, *l*	*Mazamet*, n.
Sorgues, *l*	*St Afrique.*
Lers,	*Grenade.*
Giron,	*Puylaurens.*
Arriège,	*Pamiers*, FOIX.
Lers,	*Mirepoix.*
Salat,	*St Girons.*
Adour,	Bayonne, *St Esprit, Dax, Aire*, TARBES, *Bagnères-en-Bigorre.*
Gave-de-Pau, *l* *	*Orthez*, PAU, *Lourdes.*
Midouze,	MONT-DE-MARSAN.
Lees, *l*	*Aire.*

Basins inclined to the Mediterranean.

Thet,	PERPIGNAN.
Aude,	Narbonne, CARCASSONNE, *Limoux.*
Fresquel,	Castelnaudary.
Orbe,	Béziers, Bedarieux.
Jean,	*St Pons.*
Herault,	*Agde, Pezenas.*
L'Ergue,	*Clermont-de-Lodève*, Lodève.
Arre,	Le Vigan.
Co. Hérault,	Cette, *Mèze.*
Lez,	MONTPELLIER.
Vidourle,	*Lunel-la-Ville, St Hippolyte.*
Vistre,	NÎMES.
Rhone,	Arles, *St Gilles*, Tarascon, Beaucaire, AVIGNON, *Le Pont St-Esprit*, Montelimart, VALENCE, *Tournon*, Vienne, Givors, LYON, *Belley* (all in France). GENEVA, LAUSANNE, Vevay, *Martigny*, SION or SITTEN, *Visp, Leuk* (in Switzerland).
Gardon,	Beaucaire, Alais.
Seine, *l*	*Uzès*, n. (on the Auzon, l. t.)

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* The Gave-de-Pau issues from a lake fed by the glaciers of Mont Perdu, and then forms the Falls of Gavarnie or Marboré, the highest in Europe, descending with wild grandeur 1350 feet into the valley of Luz. Four other waterfalls, one of which is 600 feet high, leap over the rocks near the Marboré.

Basins inclined to the Mediterranean (continued).

Rivers.	*Towns.*
Anduze,	Anduze, St Jean-du-Gard.
Durance, *l*	AVIGNON, *Cavaillon, St Remy*, n., *Pertuis, Manosque, Sisteron, Embrun, Briançon.*
Calavon,	*Apt.*
Bleone, *l*	DIGNE.
Lure,	GAP.
Ouvèze, *l*	AVIGNON.
Auzon, *l*	Carpentras.
Sorgue,	*L'Isle.*
Aigues, *l*	Orange.
Ardèche,	*Aubenas.*
Ouvese,	PRIVAS.
Drôme, *l*	*Crest.*
Isère, *l*	Romans, GRENOBLE.
Morge,	*Voiron.*
Cance,	Annonay.
Gier,	Rive-de-Gier, *St Chamond.*
Saône,	LYON, *Villefranche*, MAÇON, *Tournus*, Chalons-sur-Saône, *Auxonne, Gray.*
Azergue,	Tarare, n. (on the Tardine, r. t.)
Reyssouse, *l*	BOURG.
Seille, *l*	*Poligny.*
Vaillère, *l*	LONS-LE-SAULNIER.
Doubs, *l*	Dôle, BESANÇON, *Montbelliard, Pontarlier.*
Loue, *l*	*Arbois*, n., *Salins*, n.
Savoureuse,	*Belfort.*
Bouzoire,	Beaune.
Ouche,	DIJON.
Drejon, *l*	VESOUL.
Ain,	*St Claude*, n. (on the Bienne, l. t.)
Savière, *l*	Drains Lake Bourget, in Savoy.
Leisse,	CHAMBERY, capital of Savoy.
Fieran, *l*	Annecy, in Savoy.
Arve, *l*	GENEVA (Switzerland).
Etang-de-Berre,	*Les Martigues.*
Touloubre,	*Salon.*
Arc,	Aix.
Verne,	MARSEILLE, *Aubagne, Auriol.*
Co. Provence,	*La Ciotat*, Toulon, *Antibes.*
Gapeau,	Hières.
Argense,	*Lorgues.*
Artuby, *l*	DRAGUIGNAN.
Calami,	*Brignolles.*
Siagne,	*Cannes.*
Esteron, *l*	Grasse.

Basins inclined to the North Sea.

Rhine,	STRASBOURG.
Moselle, *l*	*Thionville*, METZ, *Pont-à-Mousson*, NANCY, *Toul*, EPINAL, *Remiremont.*

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Sarre,	*Sarreguemines.*
Meurthe,	NANCY, Lunéville, *St Diey.*
Madon, *l*	*Mirecourt.*
Moder, *l*	Haguenau, *Bischwiller.*
Zorn,	*Saverne,* Phalsbourg.
Ill, *l*	STRASBOURG, Schelestadt, COLMAR, Mulhausen.
Bruche, *l*	*Oberheim.*
Liepvrette, *l*	St Marie-aux-Mines.
Thaur, *l*	Mulhausen, *Thann.*
Meuse,	*Givet,* Charleville, MEZIÈRES, Sedan, Verdun, *St Mihiel.*
Sambre, *l*	*Maubeuge.*
Scheldt,	*Condé, Anzin,* Valenciennes, Cambrai.
Lys, *l*	Tourcoing, n., *Commines, Armentières,* Bailleul, n., *Merville, Aire.*
Deul,	Roubaix, n., LILLE, *Carvin-Epinoy, Lens.*
Beurre, *l*	*Hazebrouck.*
Lawe,	Bethune.
Scarpe, *l*	Douay, ARRAS.
Selle,	*Solesmes, Le Cateau.*

14. **Lakes.**—France is singularly devoid of lakes, and the few that exist are of very small dimensions. Grand Lieu, the largest of them, in the department Loire Inférieure, occupies only 20 square miles, and St Point, in department Jura, 3 square miles. But there are numerous lagoons, or salt marshes, called *Etangs,* in the south-western and south-eastern departments, from which large quantities of salt are annually produced. The principal are Carcans and Certes, in Gironde; Sanguinet and Biscarosse, in Landes; Leucat and Sigeau, in Aude; Thou, in Herault; and Etang de Berre in Bouches-du-Rhone.

15. **Climate.**—The climate of France is scarcely surpassed by that of any country in Europe; though, owing to the great extent of its surface, there are great diversities. Thus, in the N.W. departments, it greatly resembles the S. of England; in the N.E. the winters are long and often severe; in the S.E. the sky is almost always serene, and the winters of short duration. The mean annual temperature in the N. is 50°, and in the S. 60° Fahr. Mean annual rain on the W. coast 24 inches, S. 23, N. 22 inches; rainy days at Paris 105, on W. coast 152, in the interior 147, but on the coast of the Mediterranean only 66. The hot winds of Africa frequently spread desolation in the S.E. departments, while the S.W. are exposed to piercing winds and tempests from the Pyrenees and Bay of Biscay. The olive is successfully cultivated in the S.E.; the general cultivation of maize extends northward to a line drawn from

Bordeaux to Strasbourg; and the vine is profitably cultivated as far north as a line connecting the mouth of the Loire with Mezières on the Meuse.

16. **Geology.**—The geology of France is as varied as that of England, comprehending all the formations of the geological scale. The secondary strata, however, are the most highly developed and cover the largest portion of the surface. They prevail chiefly in the E. and N.E. departments, from the Mediterranean to Metz on the Moselle. They also cover a large part of the west of France, extending from the Garonne to the mouth of the Seine, but not including Brittany, which is nearly all silurian. The next in importance is the tertiary series, which occupies the region between the Pyrenees and Garonne; an extensive tract along the east side of the Rhone and Saône; and a still more extensive area around the capital, known as the *Paris basin*, and celebrated as the field in which the great Cuvier made his remarkable palæontological discoveries. Granitic rocks occur in many places, but prevail especially in Brittany, and along the great watershed separating the basins of the Loire and Garonne; and, lastly, volcanic rocks are numerous in Cantal and Puy-de-Dôme, where they form an irregular ridge of mountains, consisting chiefly of extinct volcanoes. The most abundant coal-deposits are found in the central departments, especially in the basins of the Loire, Creuse, Dordogne, Aveyron, Ardèche, and Rhone, and in the mountains of Cevennes. An extensive coal-field extends from Boulogne in an easterly direction to Belgium, and forms a source of great wealth to the flourishing cities of the north coast of France; but it is a curious fact that coal in France is unaccompanied by ironstone, a mineral which so greatly enhances its value in England and Scotland.

17. **Minerals.**—The most important minerals are iron, found in all parts of the kingdom, and worked to the extent of half a million of tons annually; coal, as already described, wrought in 400 coal-mines, and yielding upwards of 4,000,000 tons annually; salt-mines of great value; copper, lead, silver, antimony, small quantities of gold, sulphur, sulphate of iron, marble, alabaster, building-stone, and slate.

18. **Botany.**—France surpasses all other European countries in the number and variety of its indigenous plants. Thus, while the indigenous plants of the British Isles amount only to 4400 species, of which 1600 are flowering, France contains 7000 species, of which 3540 are flowering, or, according to Martins, 3660, of which 713 are monocotyledons and 2950 dicotyledons. The principal *forest trees* are the different varieties of the pine tribe, as common fir in Vosges and Jura, and the larch in the loftier Alps; the oak, beech, elm,

ash, birch; and the cork-tree in Lot-et-Garonne. Forests occupy about 17,000,000 acres, being nearly an eighth of the entire surface; these are the more valuable in that they grow in soils which could not otherwise be turned to good account. The principal *fruit-trees* are the vine, olive, chestnut, walnut, almond, apple, pear, cherry, orange, citron, fig, pomegranate, pistachio, lemon, and plum.

19. **Agriculture** is in a backward state, though the recent improvements have been extensive, and the implements used in husbandry are of an inferior description. The British system of rotation of crops is unpractised, and large farms are unknown. This is mainly owing to the extreme subdivision of property. When a landed proprietor dies, the land is equally divided among all his children. The result is that there are now in France about 11,000,000 landed proprietors (or nearly a third of the entire population), each of whom, on an average, owns 12 acres. The soil is in general of moderate fertility, and in many places very rich; $\frac{1}{2}$ is under cultivation, $\frac{1}{7}$th occupied with forests and fruit trees, $\frac{1}{10}$th in permanent meadows, and $\frac{1}{7}$th in unreclaimed waste land. Wheat and the vine form the principal objects of culture, and next to them barley, oats, rye, buckwheat, Indian-corn, pease, beans, potatoes, and flax. Wheat is grown chiefly in the north, where the vine cannot be cultivated successfully; maize in the south, and rye throughout the whole country. The quantity of corn raised is usually sufficient for the wants of the population, and considerable quantities are often exported. Mulberry trees form an important article of culture, especially around Lyon; beetroot, from which sugar is largely manufactured; tobacco and madder are cultivated in several departments, but the olive almost exclusively on the coast of the Mediterranean.

20. **Zoology.**—Among the wild QUADRUPEDS may be reckoned the black and brown bear in the Pyrenees; the lynx in the higher Alps; the wolf and wild boar in the forests; the chamois and wild goat in the Alps and Pyrenees; the stag, roebuck, hare, rabbit, and fox, are common; the marmot, ermine, hamster, the red, alpine, and flying squirrel in the Vosges; the badger, hedgehog, polecat, weasel, rat, mouse, and mole, everywhere; the beaver is found on the banks of the Rhone; the otter and water-rat in most of the other rivers. BIRDS.—The songsters and the birds of passage are much the same as in England; the flamingo is found on the shores of the Mediterranean; the red and grey partridge, quail, pheasant, woodcock, plover, lapwing, wild-duck, and snipe are common; the eagle, falcon, and buzzard in the mountains. REPTILES are represented by numerous species of frogs, including the salamander, by a few tortoises, and by several species of vipers and of harmless snakes. FISHES. — The herring, mackerel, sardine, pilchard, turbot, sole, whiting, on the west coast; the tunny and anchovy in the Mediterranean; and the salmon in the river-estuaries. The ARTICULATA include the crab, lobster, crayfish, and numerous insects, among which may be mentioned bees, which are extensively reared; and the silkworm, which forms a highly important source of wealth. Of MOLLUSCA, the oyster and mussel form important articles of food.

21. **Ethnography.**—The French people are of a mixed race, partly Teutonic, but chiefly Celtic. The Gauls, or Celts, were the original inhabitants, but were invaded early in the fifth century by the Franks, a confederacy of German tribes who had previously occupied the right bank of the Rhine.

The French *Language* is an important member of the Greco-Latin family. The country having been long subject to the Romans, the original language of the inhabitants was displaced by the Latin, which was in turn greatly corrupted by the Franks. The Armoric, however, a purely Celtic dialect, continues to be spoken in Brittany; and the Basque, which cannot be classed under any known family, is spoken in the extreme S.W.—(See under "Europe," p. 96.)

Religion.—The great bulk of the population are adherents of the Church of Rome. In 1846 upwards of 32,000,000 belonged to that faith, while only 1,800,000 were Protestants, and 60,000 Jews. Protestants, and even Jews, are endowed by the State as well as the dominant religion; but the amount of toleration shown to those denominations who will not submit to State control is very imperfect.*

In regard to *Education*, France occupies the middle place among the nations of Europe, standing above Scotland and below Austria. While 60 per cent of the population between the ages of seven and fourteen attend the primary schools, popular instruction is very unequally distributed; for while in the eastern departments $\frac{8}{10}$ths of the adult community can read and write, only $\frac{3}{10}$ths can read and write in the centre and west. In 1833 a system of national education was established; and every commune (or parish) is now obliged to maintain at least one elementary school, at which, however, attendance is not compulsory. The number of children attending such schools in 1847 was 3,146,000. The Universities are four in number—viz., those of Paris, Poitiers, Toulouse, and Montpellier. These are parted out into colleges, there being commonly one college in every department; but the Romish Church educates its clergy in its own ecclesiastical seminaries, in which the curriculum is very limited.

In intellectual character the French people occupy a foremost place; while for exquisite taste, politeness, and courtesy of manners, they are unrivalled among the nations. In moral qualities, however, they are less favourably distinguished; they are deficient in solidity of character and strength of principle; incapable alike of bearing prosperity or adversity; fickleness of disposition, and a passion for military glory, are prominent features of their character. Licentiousness of manners is another distinguishing trait, especially in large cities: in the capital, for instance, every third mother is unmarried, and every third child has a stain on his birth; but over the whole country the proportion is only one to fourteen.

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* In January 1858 a decree was issued intimating that the Protestants now in the country must be contented with being tolerated exactly in their present condition. No attempts at proselytism will be allowed; no new churches or new schools will be tolerated; and, as a climax to this piece of religious oppression, it is further intimated that all attempts to discuss religious questions will be treated as sedition, and suppressed accordingly. On the whole, Protestantism has hardly been in a worse condition in France since the reign of Louis XIV.

22. **Literature.** — Though France cannot boast of many geniuses of the first order, a great number of brilliant names adorn her literature. The following are amongst the most distinguished of her many gifted sons:—

POETRY.—Molière, Racine, Corneille, La Fontaine, Boileau, Crebillon, Voltaire, Beranger, J. B. Rousseau, Hugo, Dumas, Musset.

HISTORY.—Froissart, Voltaire, Rollin, Comines, de Thou, Sully, Barante, Thierry, Thiers, Mignet, Guizot.

FINE ARTS.—Poussin, Vouet, Claude Lorrain, Le Sueur, P. Mignard, Charles Le Brun, Watteau, Vernet, Greuze, David.

PHYSICAL SCIENCE. — La Place, Lavoisier, Lagrange, Lalande, d'Alembert, Buffon, Réaumur, Jussieu, Cuvier, Arago, Balbi.

MENTAL SCIENCE. —Descartes, Malebranche, Gassendi, Bayle, Condillac, Montesquieu, Cousin.

PULPIT ELOQUENCE.—Bourdaloue, Bossuet, Fénélon, Massillon.

SACRED LITERATURE. —Calvin, Beza, Pascal, Bochart, Daille, Tillemont, Le Long, Dupin, Fleury, Basnage, Saurin, Le Clerc, Calmet, Houbigant.

MISCELLANEOUS. — Rabelais, Montaigne, H. and R. Stephens, Casaubon, Salmasius, Herbelot, Sévigné, Du Cange, Montfaucon, Le Sage, Fontenelle, Marmontel, Diderot, St Pierre, Volney, de Sacy, Champollion, Chateaubriand, La Bruyère, La Rochefoucauld, Vauban, Talleyrand, Hugo, Dumas, Musset, Balzac, De Kock, Eugene Sue, Lamartine.

23. **Form of Government, Army and Navy, Public Debt, Revenue and Expenditure.**—Recently a Republic, France has been since 1852 under an imperial despotism, the reigning sovereign being Napoleon III., formerly Prince Louis Napoleon, President of the Republic, and nephew of Napoleon the Great. The press is fettered, and there are but few remains of popular freedom; but in general the country is enjoying unwonted prosperity. The standing army amounts to 400,000, but during the late war with Russia it amounted to 590,000. The navy, in 1854, consisted of 280 sailing-vessels and 108 steamers, mounting, together, 11,773 guns. The cost of the army and navy, in the same year, was

£17,740,000. The public debt, in 1854, amounted to £242,943,906, being about one-third of that of Britain, and costing the country about £20,000,000 annually. The gross revenue for 1857 amounted to £68,000,000 sterling, of which £20,000,000 were expended on the interest of the debt; £20,000,000 on the army and navy; £20,000,000 on account of collection and public order; and the remainder in meeting the minor obligations of the government.

24. **Commerce, Manufactures, Exports and Imports.**— France ranks next to Britain in regard to the extent and value of her commerce and manufactures. In 1852 the tonnage of vessels cleared was 1,863,406 tons, and of vessels entered 2,438,203 tons. The value of the exports was £67,280,000, and of the imports £57,520,000. The quantity of raw cotton imported in 1852 amounted to 211,022,362 lbs.; silk (1850), 12,840 lbs.; flax, 41,383,279 lbs.; wool, 44,123 lbs.: the other principal imports were tea, coffee, sugar, tobacco, wax, tallow, linen, yarn, horses, cattle, hides, timber, iron, and coals; and the principal exports, silk and woollen stuffs, linen, laces, cloth, paper, wine, brandy, fruits, salt, plate-glass, jewellery, clocks, watches, hats, gloves, porcelain.

25. **Inland Communication.**—As compared with England and Belgium, RAILWAY communication in France is still in a backward state, though great progress has been made during the last few years. In 1854 the number of miles open for traffic was 2526, and at the close of 1857 about 4500 miles, besides several additional lines either in progress or projected.

Nearly all the principal lines radiate from Paris as a centre, and proceed to the extremities of the kingdom. Thus, one line proceeds north from Paris to Amiens, and then branches to Boulogne and Lille; a second quits Paris in a westerly direction for Rouen, and then forks to Dieppe and Havre; a third leads from Paris, eastward, to Strasbourg and Basle; and a fourth proceeds from Paris in a southern direction, but soon divides into two branches, one S.E. to Dijon and Chalons-sur-Saône, and the other to Orléans, from which it sends one branch to Bourges and Nevers, and another to Tours and Nantes.

CANALS.—There are eighty-six canals, whose united length is 2350 miles, and which connect all the principal rivers of France. The most important are the following: *Canal du Midi*, from Toulouse, on the Garonne, to the lagoon of Thou, connects the Atlantic and Mediterranean. *Canal du Centre*, from Chalons-sur-Saône to Digoin in Saône-et-Loire, unites the Loire with the Rhone. *Rhine and Rhone Canal*, partly in the line of the Doubs, unites the Rhine and Rhone. *Canal de Burgogne*, from the Saône to the Yonne, connects the Rhone with the Seine.

The ROADS are divided into two classes—viz., Royal and Departmental. Of the former there are twenty-six, whose united length is 24,900 miles; and of the latter, ninety-seven, with a united length of 22,500—making a total of 47,400 miles.

26. Colonial Possessions.*

	Area in Eng. Square Miles.	Population (1851.)
AFRICA.		
Algeria,	216,635	2,880,383
Senegal, Goree, Albreda, &c.,	1	32,879
Assinie (Gold Coast),	...	...
Bourbon, or Réunion (Indian Ocean),	905	10,826
Nossi-Bé, Mayotte, and Ste Marie, (do.)	563	27,905
ASIA.		
Mahé (Malabar Coast),	2	3,419
Karikal (Coromandel Coast),	63	59,872
Pondicherry (do.),	109	96,712
Yanaon (Orissa),	13	6,464
Chandernagore (Bengal),	4	31,396
OCEANIA.		
New Caledonia,	7,815	60,000
Tahiti (Society Islands),	...	9,000
Marquesas,	508	20,000
Gambier and Wallis Groups,	...	1,500
AMERICA.		
St Pierre and Miquelon (near Newfoundland),	82	2,226
Martinique, Guadeloupe, Desirade, Marie Galante, Saintes, San Martin (all in the West Indies),	1,691	256,511
French Guiana (South America),	27,560†	17,625
Total Colonial Possessions,	255,950	3,516,718
France with Corsica (1856),	207,232	36,039,364
French Empire,	463,182	39,556,082

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* The statistics are mainly from the "Almanach de Gotha" for 1859, where, however, the areas are given in French hectares. One hectare=11,960 English square yards, or 2½ acres nearly.

† The "Almanach de Gotha" gives the area of French Guiana at 503,510 hectares (or about 1964 English miles): this is evidently an error. In the text we have followed Malte-Brun and Balbi.

BELGIUM.

1. **Boundaries.**—N. the Netherlands ; N.W. the North Sea ; S.W. and S., France ; E., Dutch Luxembourg, Rhenish Prussia, and Dutch Limbourg. Lat. 49° 30′—51° 30′ N., long. 2° 33′—6° 5′ E. Brussels, the capital, situated nearly in the centre of the kingdom, is nearly on the same parallel with Cape Clear in Ireland, Dover in England, Dresden, Breslau, Lublin, Tchernigov, Uralsk on the continent of Europe, and Irkutsk in Siberia ; and nearly on the same meridian with the Hague, Lyon, and Minorca.

2. **Form and Dimensions.**—The form approaches an isosceles triangle, with the base or longest side resting on France. Length along the base 175 miles, and the greatest breadth from the apex of the triangle to the base, 105 miles.

3. The **Coast-line** is small, measuring only forty miles ; but the Maas and Scheldt, with their principal affluents, being navigable, and the country being intersected by excellent canals in all directions, the commercial facilities are very great.

4. **Surface.**—The greater part is level, and but little elevated above high-water mark ; but the southern provinces form a slightly inclined plane, sloping towards the north. Natural barriers, consisting of sandhills 50 or 60 feet high, protect the country from the inroads of the sea ; while numerous artificial banks have been constructed along the rivers to save the country from inundation.

5. **Area** 11,313 square miles, or nearly twice as large as Yorkshire, and furnishing 1⅔ acre to each inhabitant.

6. **Population.**—In 1856 the population was 4,529,461, being 400 persons to each square mile. Belgium is therefore the most densely peopled state in Europe. The northern provinces are the richest and most populous, East Flanders having 677 inhabitants to the square mile.

7. **Political Divisions.**—The kingdom is divided into nine provinces, each of which is subdivided into arrondissements, communes, and cantons. Commencing at the North Sea, and proceeding eastward and southward, the provinces and towns are enumerated in the following table :—

West Flanders.*—BRUGES 50, Ostend 15 (Ostend Canal), Courtrai 20 (Lys), Thielt 13 n., Roulers 10 (Mandel), Ypres 15 (Yperlee), Poperinghe 11 (Vleterbeque.)

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* The pronunciation of Belgian proper names does not in general differ essentially from that of the Dutch ; for which, see under "Netherlands."

Towns between 5,000 and 10,000 Inhabitants.—Menin, Werwick, Warneton, Meulebeke, Ingelmünster, Iseghain, Thourant, Furnes, Dixmude.

East Flanders.—GHENT 112, St Nicholas 20, Zele 10 n., Renaix 14 n. (Scheldt), Lokeren 16 (Duvine), Alost 16 (Dender).

Beveren, Themsche, Dendermonde, Wetteren, Oudenarde, Hamme, Eecloo.

Antwerp.—ANTWERP 97 (Scheldt), Mechlin or Malines 28 (Dyle), Lierre 14 (Nethe), Turnhaut 13 n. (Little Nethe).

Boom, Gheel.

Limbourg.—HASSELT 9 (Demer), St Trond 10 (Geete), Tongres 6 (Jaar).

Liege.—LIEGE 77 (Maas), Verviers 20 (Vesdre).

Herstal, Huy.

Belgian Luxembourg.—ARLON 5 (Semoy, a right-hand affluent of the Maas).

Namur.—NAMUR 25, Dinant 6 (Maas).

Hainaut or **Hainault.**—MONS 23 (Haine), Tournay 30 (Scheldt).

Binche, Peruwelz, Charleroi, Lessines, Ath, Leuze, Soignies, Enghien, Brain-le-Comte, *Fleurus*, *Fontenoy*, *Gemappe*.

South Brabant.—BRUSSELS 260 (Senne, a tributary of the Dyle), Louvain 30 (Dyle).

Vilvorde, Hal, *Waterloo*, Nivelles, Wavre, *Genappe*, Diest, Tirlemont, *Ramillies*, *Quatre Bras*, *Ligny*.

8. **Descriptive Notes.**—The towns in Belgium may be classified as follows:—Sixty-two towns of above 5,000 inhabitants; twenty-five above 10,000; twelve above 20,000; five above 50,000; two above 100,000. Those above 50,000 are Brussels, Ghent, Antwerp, Liège, Bruges; and those above 100,000 are Brussels and Ghent.

Bruges (*Flemish* Brugge), signifying "bridges," owes its name to the numerous bridges which cross the canals which intersect it, is a fortified city, capital of the province, and formerly one of the greatest marts of commerce in Europe; began to decline in the fifteenth century, when the religious persecutions of Philip II. obliged many of the inhabitants to seek refuge in England; still noted for its lace and linen manufactures: here oil-painting and decimal arithmetic had their origin. *Ostend*, the only maritime town of Belgium, and the principal port for the herring-fishery; is the packet station for England, and is strongly fortified; has shipbuilding docks, and is much resorted to for sea-bathing; and here terminates the great system of canals which intersect the kingdom. *Courtrai*, a fortified town with important manufactures of damask and Brussels carpets. *Ypres*, also fortified, has extensive manufactures of lace. *Furnes*, the most westerly town in Belgium, has an active trade in cattle. *Ghent* (*French* Gand), at the confluence of the Scheldt and Lys, a walled and fortified town intersected by numerous canals, which are crossed by 300 bridges: from the great extent of its cotton manufactures it has been called the Manchester of Belgium: it is the seat of one of the four universities, and the birthplace of Charles V. *St Nicholas* and *Lokeren* are also chief seats of the cotton manufacture. *Oudenarde*, celebrated for the victory gained by the Duke of Marlborough and Prince Eugene over the French in 1708. *Antwerp* (*French* Anvers), a large and strongly fortified city on the Scheldt, and the chief emporium of Belgian commerce, contains a noble cathedral, many valuable works of art, and extensive manufactures, the chief of which are silk and cotton hosiery: it was once the wealthiest and most commercial city in Europe. Here died the illustrious Rubens in 1640, and it is the birthplace of Jordaens, Vandyk, and Teniers. *Mechlin* (*French* Malines) on the Dyle, and at the intersection of several railways, is a place of great trade, especially in flax, corn, and oil. *Lierre* and *Turnhaut* have extensive manufactures of lace, linen, and cotton. *Hasselt*, *St Trond*, and *Tongres*, active manufacturing towns. *Liège* (*Dutch* Luyk, *German* Lüttich), a fortified and populous city on the Maas, at the confluence of the Ourthe, is called the Birmingham of Belgium, on account of its vast ironworks and extensive coal-mines; long celebrated for the manufacture of arms, which it largely exports to Germany and Prussia. *Verviers*, noted for its manufactures of yarn and woollen cloth, soap and dye-works. *Huy* (We), a fortified town, with a college, ironworks, several factories, and an active trade in corn. *Namur*, a strongly fortified city at the confluence of the Maas and Sambre, is celebrated for its cutlery: it has extensive manufactures of iron, steel, and bronze articles; also famous glass-works and tanning establishments: in the vicinity are rich mines of coal, iron, lead, and copper. *Mons*, a fortified city on the Haine, a right-hand affluent of the Scheldt, with numerous coal-mines in the vicinity. *Tournay*, a strongly fortified city on the Scheldt, has a royal factory for the manufacture of Brussels carpets. *Charleroi*, near the centre of an extensive and valuable coal-field, is well situated both for manufactures and trade, having ample means of communication by railway, canals, and good roads, with the most important towns in the kingdom. *Fleurus:* various sanguinary battles took place in its vicinity in 1622, 1690, 1794, and 1815. *Fontenoy*, a village five miles S.E. of Tournay, memorable as the place where, in 1745, the British were defeated by the French. *Brussels* (*French* Bruxelles), capital of Belgium, on the Senne, an affluent of the Dyle; was formerly distinguished by the title of "The Ornament of the Netherlands," and still possesses many attractions. The city is adorned with many fine buildings, fountains, and public walks of great beauty. It is the chief seat of public instruction; contains a university, two public libraries—one of 100,000 volumes, and the other of 70,000, besides 25,000 MS. volumes, and numerous other literary and scientific institutions. Brussels was long celebrated for its carpets and lace, but the former branch of manufacture has now greatly declined. Brussels is an ancient city, having probably been founded in the seventh century: it was fortified in the eleventh century, and was the residence of the Dukes of Brabant, and afterwards of the Spanish and Austrian governors-general of the Netherlands; under the first French Empire it was the capital of the department of the Dyle; and previous to 1830 it was one of the capitals of the kingdom of the Netherlands. *Louvain*, long the seat of a famous university, now replaced by a popish college. *Waterloo*, a village nine miles south of Brussels, famous for the great battle fought near it, June 18, 1815, between the French under Napoleon I., and the British under the Duke of Wellington, when Napoleon was utterly defeated. *Gemappe*, a village on the left bank of the Dyle, seventeen miles S.E. of Brussels; near it various military actions took place in 1815. *Ramillies:* here the Duke of Marlborough defeated the French, 23d May 1706. *Quatre Bras,* a village ten miles from Waterloo, and the scene of an indecisive action between the French and the British, with their allies (16th June 1815), in which the Duke of Brunswick fell. *Ligny,* a village fourteen miles W.N.W. of Namur, celebrated for a combat between the Prussians and French, 16th June 1815.

9. **Mountains.**—Belgium is destitute of mountains; but the southern and eastern provinces are traversed by the heights of Ardennes, which enclose the valley of the Maas, and separate its basin from that of the Moselle: highest point at Stavelot, near Liège, 2000 feet in elevation. The high ground which separates the basins of the Maas and Scheldt also belongs to the Ardennes range, which is a northern ramification of the Vosges Mountains.

10. **Principal River-Basins.**—The Maas (*Fr.* Meuse) and the Scheldt (*Fr.* Escaut), are the only rivers of Belgium that deserve attention. The former has a total length of 434 miles, and the latter of 200 miles; but only a part of their course belongs to this kingdom. Of the nine capitals of provinces above enumerated, three belong to the Maas—viz., Liège, Namur, and Arlon; and five to the Scheldt—viz., Antwerp, Ghent, Brussels, Hasselt, and Mons. For the table of rivers and towns, see under "Netherlands," where the complete river-system of both countries will be found.

11. The **Climate** is in general temperate, mild, and agreeable, but it is humid and unhealthy in the N. and N.W. The mean temperature of the year at Brussels is 50°.4, winter 38°, summer 64° Fahr.; the range of temperature is very great—the extreme heat being 91°.6, and extreme cold 3° below zero. The prevailing winds are from the S.W., and the annual fall of rain is about 26 inches.

12. **Geology.**—Tertiary formations cover the whole N.W. and centre; but in the E. and S. carboniferous and Devonian strata prevail, containing many extensive and valuable coal-fields, especially in the provinces of Namur and Liège. There is also a small patch of secondary rocks north of Liège.

13. The **Minerals** are numerous and highly important, embracing coal and iron, which are wrought most extensively around Mons, Liège, and Charleroi. 83 coal-beds are enumerated, which yield annually about 5,000,000 tons of coal, being more than any other country on the Continent. In 1837 there were 352 mines in operation. Liège alone produces 150,000 tons of iron annually; and many other iron-mines are wrought between the Maas and the Sambre. Other minerals are, copper in Hainault and Liège; lead in Liège, Namur, and Luxembourg; calamine, or carbonate of zinc, in Namur, Liège, and Hainault, where is obtained one-half of all the zinc used in Europe; also manganese, sulphur, alum, slate, and building-stone, besides several other useful minerals.

14. **Botany.**—The indigenous vegetation of Belgium differs so little from that of the north of France and the south of England, that it is unnecessary to describe it. Among the forest trees are the oak, chestnut, horse-chestnut, beech, elm, ash, walnut, fir, and poplar.

15. **Agriculture** is in a highly flourishing state, and has long served as a model to neighbouring countries. The soil is not naturally fertile, as it generally consists of either sand or clay, but the skill and industry of the husbandman have so judiciously mixed these ingredients that Belgium may now be regarded as the richest and most productive country in Europe. The rotation of crops is carefully attended to; artificial manures are largely employed; and the result is, that though the country is so densely peopled, the quantity of corn raised is double that required for home consumption. Eleven-twelfths of the entire surface are under cultivation, and the remainder yields excellent timber for bark and building purposes. Clover forms an extensive article of farming, and the chief food of the cattle, which are usually stall-fed, the seed being exported to England. The flax is of an excellent quality, and is also largely exported. The vine is cultivated on the banks of the Maas, but the wine is of an inferior quality. Hops, beetroot (for sugar), chicory, and tobacco, are grown in the central provinces; potatoes, flax, oilseed, and madder, in Flanders; and wheat, rye, barley, oats, and buckwheat everywhere.

16. **Zoology.**—The principal wild animals are the roebuck, wolf, bear, and wild boar. The moors around Verviers are said to be the only asylum in continental Europe for the heath-cock. Among domestic animals may be reckoned horses, horned cattle, sheep, and pigs, all of which are reared in great perfection. The culture of bees and of the silkworm is also pursued to great advantage.

17. **Ethnography.**—Two races of people are found in Belgium—a Teutonic and a Greco-Latin—the Flemings proper being of German, and the Walloons of French extraction. The *Belgæ* formed one of the three great nations into which Cæsar found the population of Gaul divided, when their territory extended from the Rhine on the N. to the Seine and Marne on the S. They had, in Cæsar's time, driven out or reduced to subjection the former inhabitants, who appear to have been Celts; but the Belgæ themselves had crossed the Rhine from Germany. The *Walloons* in the S.E. are mixed Celts, and the name bears an affinity to the terms *Wales* and *Welsh* of our country.

The *Languages* are three in number—French, Walloon, and Flemish. Modern *French* is the language of the court, of the legislature, and of literature. The *Walloon* is a dialect of the French, or rather it is the same as the French of the thirteenth century, and is spoken by 1,800,000 in Hainault, Liège, Namur, and Luxembourg. The *Flemish* is spoken by about 2,400,000, chiefly in Flanders, Antwerp, and Limbourg: it is closely allied to Dutch, and is, in fact, merely the Dutch of the preceding century. It differs from modern Dutch chiefly in orthography and pronunciation; is less guttural, and has adopted many French words. German is spoken in a part of Luxembourg.

Religion.—The population of Belgium belong almost exclusively to the Romish Church; but other denominations are not only tolerated, but their churches are supported by the State, and Protestantism is on the increase.

Education is well attended to, Belgium being a better educated country than either France or Austria. By the census of 1846 it appears that nearly half a million children were attending school, or a ninth part of the whole population. Since Belgium was separated from the Netherlands (1830), attendance at school is no longer compulsory; and public instruction is wholly under the control of the priests. There are four universities (Ghent, Liège, Brussels, and Louvain), fourteen public libraries, containing 500,000 volumes, numerous gymnasia on the German model, and diocesan seminaries in nearly all the large towns.

The *National Character* is not homogeneous, owing to the existence of two distinct races, each of which has preserved its own customs, language, and manners from early times. The Flemings, however, greatly resemble the Dutch in cleanliness, perseverance, and laborious industry. The Walloons resemble the French in dress, manners, and vivacity of disposition. Both races are excessively attached to religious shows and ceremonies, which excite surprise by their extreme puerility.

Literature.—The literature of Belgium is inseparable from that of the Netherlands, the Flemish language and the Dutch having been till recently the same. The principal authors belonging to the kingdom have written either in Latin or in French, while their native tongues have remained uncultivated, exhibiting only such works as spelling-books, devotional manuals, and the lives of saints. Belgium, indeed, has always been more celebrated for the fine arts than for literature, in which it stands greatly lower than the Netherlands. The Flemish school of painting excels in colouring and in the faithful imitation of nature, but does not always exhibit sufficient nobleness of design. It has produced eminent artists in every style; but Rubens, Vandyk, Champagne, Jordaens, and Teniers are its principal ornaments. The academy at Antwerp, the cradle of this school, was founded in 1510, but there was a society of painters at Antwerp from the year 1442. Other distinguished names belonging to Belgium are Jacob Van Maerland, "father of the poets of the Netherlands;" Philip de Comines, Schott, and Strada, in the department of history; Lipsius, Drusius, and Oudenarde, in philology and criticism; Vesalius and Van Helmont in anatomy and medicine; and Simon Stevin in mathematics, the inventor of decimal arithmetic. Music is greatly cultivated among all classes of the people, and architecture has been carried to a high degree of perfection, more especially in the Gothic style.

18. The **Government** is a limited constitutional monarchy, the legislative power being invested in the King, a Senate, and House of Representatives, the last two of which are elected by the people. Liberty of the person and of conscience, freedom of speech and of the press, and trial by jury, are guaranteed by the laws. The origin of the kingdom as a separate state dates only from 1830; and Belgium is consequently the most recently formed independent state in Europe. It successively formed part of the dominions of Austria and Spain from the fifteenth century until 1795, when it was conquered by the French: it was annexed to Holland in 1815, but successfully asserted its independence in the autumn of 1830.

The *Army* in 1831 was very large, amounting to 590,000 soldiers; but it is now greatly reduced. In 1853 it did not exceed 100,000 men; while in 1858 the infantry numbered 56,550, the cavalry 8202, artillery 6700; making a total force of 71,452. The *Navy* is insignificant, but increasing; and recently several powerful steamers have been constructed, which are fitted alike for mercantile and warlike purposes. The *Public Debt* in 1858 amounted to £27,720,000, being £6 per head; the *Revenue* in the same year amounted to £5,660,000; and the *Expenditure* to £5,500,000.

19. **Commerce.**—The *Exports* in 1852 amounted to £11,492,840, and the *Imports* to £11,465,840. The imports comprise various tropical products, as tea, coffee, raw sugar, cotton; tobacco from the United States; wines and fruits from the south of Europe; cotton yarn, cotton cloths, hardware, earthenware, and various manufactured articles from England; and wool from Germany. The principal exports are corn, cattle, woollen fabrics, hempen and linen cloths, flax, hemp, clover-seed, oak-bark, lace, lawn, cambric, carpets, cutlery, nails, and refined sugar. Among the principal manufactured articles may be enumerated Brussels carpets, which are unrivalled for elegance; fine lace and thread, made from the finest flax, so valuable that it sometimes fetches £400 sterling per pound; damask table-linen, and other linen cloth, paper, oilcloth, india-rubber articles, musical instruments, embroidery, ribbons, hats, and various other articles enumerated among the exports. At Seraing, near Liège, is one of the most extensive ironworks in Europe, employing from 2000 to 3000 artisans: here are manufactured cannons, firearms, steam-machinery, and locomotives.

20. **Inland Communication.**—Considering its size, Belgium is better furnished with *Railways* than any other European country.

From Mechlin, as the centre of the entire system, one main line proceeds S.W. by the capital to Mons, and then to France, where it connects with the Great Northern to Paris; a second S.E. to Liège and Cologne; a third N. to Antwerp; a fourth W. by Ghent and Bruges to Ostend. Another main line connects Antwerp, Ghent, Tournay, and Lille (in France); and the only other we can specify unites Courtrai, Tournay, Mons, Namur, and Liège. These various lines have been constructed at the expense of the government, and have powerfully contributed to develop the internal resources of the country. In 1858 the number of miles open for traffic was 813. The country is also largely intersected by excellent *Canals*, many of which admit merchant vessels. The chief of these are the Bruges and Ghent canal, which communicates with those of Damme and Ostend at Bruges; and at Ghent with another canal, which proceeds north to the estuary of the East Scheldt; and those which connect the Maas with the Scheldt—amounting together to nearly 300 miles. The two principal rivers, the Maas and Scheldt, are navigable through the whole Belgian territory. The public *Roads* are also numerous, broad, and well paved.

Belgium has no foreign possessions, Holland having retained all the colonies when, in 1830, the two countries were disjoined.

HOLLAND, OR THE NETHERLANDS.

1. **Boundaries.**—The Kingdom of the Netherlands is bounded on the N. and W. by the North Sea, S. by Belgium, and E. by Rhenish Prussia, Westphalia, and Hanover; but the Grand-duchy of Luxembourg, properly belonging to Germany, lies S.E. of Belgium, between Belgian Luxembourg and the Moselle. Lat. 49° 26′—53° 34′ N.; or, omitting Luxembourg, lat. 50° 46′—53° 34′ N.; lon. 3° 24′—7° 12′ E. Amsterdam, the capital, situated near the centre, is nearly on the same parallel of latitude as Cambridge, Hanover, Berlin, and Warsaw; and on the same meridian as Brussels, Lyon, and Minorca.

2. **Form.**—The form approaches a rhomboid, with deep indentations at the three angles washed by the sea. Length of east side, 187 miles; breadth along the Belgian frontier, 117 miles.

3. The **Coast-Line** is extremely irregular, especially in the N., where the sea has made serious encroachments on the land. Length, including the larger indentations, about 500 miles, or 1 mile of coast to each 27 miles of surface.

4. **Area**, including Limbourg and Luxembourg, 13,616 square miles, or nearly twice the size of Wales, and affording 2⅗ acres to each inhabitant.

5. **Population** (in 1858), 3,523,823, being 259 persons to each square mile of surface. The western provinces, North and South Holland, are the most populous parts of the kingdom, and contain the largest towns; while Drenthe in the N.E., partly occupied by heath and waste land, is the least populous.

6. **Political Divisions.**—Holland is now divided into 12 provinces, including the two duchies of Limbourg and Luxembourg.*

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* The Republic of the Seven United Provinces, so celebrated in history, consisted of Holland, Zeeland, Utrecht, Gelderland, Overyssel, Friesland, and Grön-

North Holland.*—AMSTERDAM 260 (Amstel and Y), Haarlem 26 n., Zaandam or Saardam 11 (Y), Alkmaar 11 (Great Canal), Hoorn 10 (Zuyder Zee).

Towns between 5000 and 10,000 Inhabitants.—Nieuwer-Amstel, Enkhuizen, Helder.

South Holland.—THE HAGUE 72, Delft 17 (Schie Canal), Leyden 40 (Old Rhine), Schiedam 13, Rotterdam 102, Dort 21 (Maas or Meuse), Gouda 15 (Rhine, *Yssel branch*).

Brielle, Vlaardingen, Gorkum.

Zeeland.—MIDDELBURG 16 (W. Scheldt).

Flushing or Vlissingen, Goes, Zierikzee.

North Brabant.—BOIS-LE-DUC 21 (Dommel), Breda 13 (Merk).

Bergen-op-Zoom, Oosterhout.

Utrecht.—UTRECHT 50 (Old Rhine), Amersfoort 14 (Eem).

Gelderland.—ARNHEM 17 (Rhine), Nymegen or Nimeguen 24 (Waal), Zutphen 11 (Yssel).

Thiel, Harderwyk, Nykerk.

Overyssel.—ZWOLLE 17 (Zwarte-Water), Deventer 14 (Yssel).

Kampen, Raalte, Enschede.

Friesland.—LEEUWARDEN 27 (Ee).

Franeker, Harlingen, Sneek.

Gröningen.—GRÖNINGEN 33 (Hunse).

Drenthe.—ASSEN 2 (Hoorn Diep), Meppel 6 (Reest).

Dutch Limbourg.—MAESTRICHT 31 (Maas).

Venlo, Ruremonde, Weert.

Grand-Duchy of Luxembourg (S.E. of Belgium).—LUXEMBOURG 11 (Alzette, affluent of the Moselle).

Echternach.

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ingen; to these were afterwards added, by conquest or treaty, Drenthe and North Brabant, and in 1839 the eastern parts of Limbourg and Luxembourg.

* The following rules will aid the pupil in pronouncing Dutch proper names:—

a, e, i, o, u are sounded as in German.

aa or *ae*=*a* in far; as Haarlem, Alkmaar, also spelled Haerlem, Alkmaer (*Har′lem Alk-mar′*).

eeu=*u* in rule; as Leeuwarden (*Loo′war-den*).

ie=*ē* in me; as Vlieland (*Vlee′land*).

ĳ or *y*=*ȳ* in my; as Y, Yssel, Dyle, or Ij, Ijssel (*Eye, Isel, Dile*).

oe=*oo* in food; Coevorden (*Koo′vor-den*).

oo=*ō* in bōrne; as Hoorn (*Hōrn*).

ui, uy=*ȳ* in my; Geertruidenberg, Zuyder Zee (*Ger-trȳ′den-berg, Zȳ′der-Zēē*). Others make it=*eu* in German, or *oi* in voice.

d final=*t* in English, as Zeeland (*Tsee′lant*).

ch=*k*; as Utrecht (*Oo′trekt*).

sch=*sk*; Scheldt, Schiedam (*Skelt, Skee-dam′*).

th=*t*; Drenthe (*Dren′te*).

z=*ts*; Zwolle (*Tswoll*).

7. **Descriptive Notes.**—The towns in Holland may be classified as follows: Fifty towns of above 5,000 inhabitants; twenty-six above 10,000; twelve above 20,000; four above 50,000—viz., Amsterdam, Rotterdam, the Hague, and Utrecht; and two above 100,000—viz., the capital and Rotterdam.

Amsterdam, the capital, and by far the largest city in the kingdom, at the confluence of the Amstel with an arm of the Zuyder Zee, is one of the most important commercial cities in Europe. It is built of bricks, in the form of a crescent, and supported by piles of wood driven into the alluvial soil. In the middle of the thirteenth century it was merely a collection of fishermen's huts, but it now contains 260,000 inhabitants, and is a place of great wealth. Here are vast storehouses filled with the most valuable products of both hemispheres, immense shipbuilding docks, and numerous literary and scientific institutions. It is a great depôt for the commodities of the East and West Indies, with which it carries on an extensive trade through the Dutch colonies and its own trading companies. *Haarlem* is the centre of the Dutch trade in flowers and flower-seeds, grown in extensive nursery-grounds in the vicinity: it has numerous manufactures, chiefly cotton and bleaching; and is memorable for the siege it sustained against the Spaniards in 1572. The cathedral of St Bavon contains the largest organ in Europe, and in the market-place stands the statue of Lawrence Coster, a native of the town, and the reputed inventor of the art of printing (1440). It is also the birthplace of Wynants, Ostade, Wouvermans, Berghem, Ruisdael, Vander Helst, the painters; and of Schrevelius, author of a well-known Greek and Latin dictionary. *Zaandam,* at the confluence of the Zaan and Y, is chiefly engaged in shipbuilding: here Peter the Great, of Russia, wrought as an artisan in the dockyard. *Hoorn,* the birthplace of Tasman, who discovered New Zealand and Tasmania, and of Schouten, who discovered Cape Horn. *Alkmaar,* a fortified town on the Great Canal; near it Camperdown, off which Admiral Duncan defeated the Dutch fleet under De Winter. *Helder,* a strong fortress at the north extremity of the province, commands the principal entrance to the Zuyder Zee. *The Hague* (*Dutch,* S'Gravenhage), the usual residence of the King and States-General, may be regarded as the political capital. It is handsomely built, has a rich gallery of Dutch paintings: cannon-founding, printing, and various manufactures are carried on. The Royal Museum contains a library of 100,000 volumes and many MSS.; and there are several other scientific institutions. The Hague is the birthplace of Huyghens, the mathematician, and of William III. of England. *Delft,* long famous for its earthenware, the birthplace of the celebrated Hugo Grotius, critic and commentator. *Brielle,* a fortified seaport town on the Voorne, the birthplace of the Admirals Van Tromp and De Witt. *Gouda* is celebrated for its cheese and tobacco pipes, which are largely exported. *Leyden,* the literary capital, has a celebrated university, founded in 1575, much resorted to by students from other countries. It had 438 students in 1852: the library contains 60,000 volumes and 14,000 MSS., many of which are rare and valuable. *Rotterdam,* the second city of Holland in regard to extent, wealth, and commercial importance, is more favourably situated for commerce than Amsterdam: has numerous canals intersecting the city in all directions, and capable of admitting the largest merchant vessels: here are numerous manufactories and distilleries of gin, and more English residents than in any other city in the kingdom: it is the birthplace of Erasmus, the restorer of letters in Western Europe. *Dort,* or *Dodrecht,* was at one time the capital of the Netherlands, and the original residence of the Counts of Holland: here was held the first meeting of the States-General in 1572, which declared the independence of the United Provinces, and the still more famous ecclesiastical synod in 1618, which condemned the doctrines of Arminius. *Middelburg,* near the centre of the island Walcheren, and *Flushing,* or *Vlissingen,* in the south, are strongly fortified seaports, with considerable trade: Flushing has magnificent docks and magazines; was bombarded by the English in 1809; and is the birthplace of Admiral De Ruyter. *Bois-le-Duc* (*Dutch,* S'Hertogenbosch, "The Duke's Wood"), a fortified city at the junction of the Dommel and the Aa, has a fine cathedral, numerous manufactures, and considerable trade. *Breda,* celebrated for the association of nobles formed in 1566, and called "The Compromise of Breda," and for the congresses of 1667 and 1746, has a military academy and arsenal, and is one of the strongest fortresses in the kingdom. *Utrecht,* the fourth most important city in the kingdom, has 50,000 inhabitants, and a flourishing university attended by about 600 students; it is also noted for the treaty of peace which terminated the wars of the Spanish Succession in 1713. *Arnhem* and *Nymegen,* strongly fortified towns, on the Rhine and Waal, with an active trade. *Zutphen,* where the brave Sir Philip Sidney received his death-wound in 1586. *Zwolle:* near it is the convent where the celebrated Thomas-à-Kempis died in 1471. He was born at Kempen in Rhenish Prussia, in 1380, and studied at *Deventer* in this province. *Leeuwarden,* a considerable town, with wide streets and numerous canals, contains the tombs of the Princes of Orange. *Harlingen,* a strong fortress on the Zuyder Zee. *Gröningen,* a fortified well-built town, on the Hunse, has a university of eighteen professors and 280 students, and numerous other literary institutions. *Assen,* a small town, with trade in stone and peat. *Meppel,* a much larger place, has manufactures of sail-cloth. *Maestricht,* the seventh most important town in the kingdom, on the Maas, strongly fortified, and with manufactures of cottons, woollens, and paper. In the neighbouring hill of St Peter's are immense underground stone quarries, twelve leagues in circumference, traversed by about 20,000 passages intersecting in all directions, and forming an intricate labyrinth. In time of war the inhabitants of the surrounding country, with their cattle, find here a secure asylum. *Luxembourg,* capital of the Grand-Duchy of the same name, has a fortress of great strength belonging to the Germanic Confederation.

8. **Capes.** — Helder Point, the northern extremity of North Holland; the Hook of Holland, on the west coast of South Holland.

9. **Islands.**—One group at the entrance of the Zuyder Zee, formerly all continuous, and forming a part of the mainland, but now broken up into the islands of Texel, Vlieland, Ter-Schelling, Ameland, Schiermonnikoog, Borkum, and Wieringen; the other in the delta of the Maas and Scheldt, and consisting of Walcheren, North and South Beveland, Tholen, Schouwen, all in province Zeeland; and Over-Flakkee, Voorne, Beyerland, and Ysselmonde, in South Holland.

10. **Seas, Bays, &c.**—The Dollart, between Gröningen and Hanover; Lauwer Zee, N.E. of Friesland; Zuyder Zee,* E. of North Holland; the Y, a branch of the Zuyder Zee, in the S.W. corner; estuaries of the Rhine, Maas, and Scheldt, five in number, in South Holland and Zeeland; Strait of Helder or Mars Diep, between the Helder and Texel.

11. **Mountains.**—Among the most striking features of this country are its utter want of mountains, the perfectly level aspect of the greater portion of the surface, and the strange unnatural-looking depression of the remainder, which in many places is greatly beneath the level of the sea; and thus originating the characteristic name of the country, *Holland*, which signifies a *hollow tract.* These hollow portions are in some places protected from the inroads of the ocean by natural barriers of sand downs, as along the west coast of Holland; and in others by enormous artificial dykes of earth, faced with stones which have to be imported from other countries, as the great Helder dyke, six miles long, in North Holland, and many others in Zeeland, Friesland, and Gelderland, which rank amongst the most stupendous efforts of human industry to be found in any country, ancient or modern. The country requires to be protected in a similar manner from the inundations of the rivers, the beds of which are generally above the level of the land.

12. **River-Basins.**—There are few distinct river-basins in Holland, as the waters of the Rhine, Maas, and Scheldt, its principal rivers, intermingle at their mouths or estuaries, and thus in reality form but one basin. The Vecht and the Hunse are the only other rivers of the kingdom deserving attention. The former, after a westerly course of 90 miles, falls into the Zuyder Zee; and the latter flows N.W. 50 miles, to the Lauwer Zee. The basins of these five rivers contain ten out of the twelve capitals of provinces, leaving only the Hague and Leeuwarden, which stand on canals that answer all the purposes of rivers. Thus:—

Hunse, with Gröningen and Assen.
Vecht, with Zwolle.
Rhine: AMSTERDAM, Utrecht, Arnhem, and Luxembourg.
Maas: Bois-le-Duc, Maestricht.
Scheldt: Middelburg.

13. **Table of Rivers and Towns.**—The towns of Belgium and the Netherlands, given in the following table, are in all

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* In Cæsar's time the Zuyder Zee consisted of an inland lake named *Flevo*, and of a tract of country through which a river, 50 miles long, found its way to the North Sea; but at the commencement of the thirteenth century several destructive inundations of the ocean occurred; and before the close of that century a broad strait had been formed (now the Strait of Helder) and the lake converted into a large arm of the sea. The Dollart, Bies Bosch, and Lake of Haarlem, owe their origin to similar inundations, one of which is said to have overwhelmed seventy villages, containing 100,000 inhabitants.

112 of 5000 inhabitants and upwards, including 51 above 10,000. These stand on 48 rivers and canals, of which 12 enter the sea directly, the remainder being their affluents. All the rivers enter the North Sea.

B. signifies Belgium; F. France; P. Prussia: towns without any letter, and those with an H. after them, belong to Holland.

Rivers.	*Towns.*
Hunse,	GRÖNINGEN.
Hoorn Diep,	ASSEN.
Leeuwarden Canal,	*Harlingen, Franeker,* LEEUWARDEN.
Vecht,	*Enschede.*
Zwarte Water,	ZWOLLE.
Reest,	*Meppel.*
Rhine,*	*Kampen, Raalte,* Deventer, Zutphen (all on the Yssel branch), AMSTERDAM (on the Amstel), Leyden, UTRECHT, ARNHEM (Old Rhine), *Gouda* (on the Leck), Gorkum, Thiel, Nymegen (Waal).
Moselle, *l*	Treves (in Rhenish Prussia).
Sure, *l*	*Echternach.*
Alzette,	LUXEMBOURG.
Co. Gelderland,	*Harderwyk, Nykerk.*
Eem,	Amersfoort.
Y,	AMSTERDAM, Zaandam, Haarlem.
Zuyder Zee,	Hoorn, *Enkhuizen, Helder.*
Great Canal,	*Helder,* Alkmaar.
Schie Canal,	THE HAGUE, Delft.
Maas, or Meuse,*	*Brielle, Vlaardingen,* Schiedam, Rotterdam, Dort, *Gorkum, Venlo, Ruremonde,* MAESTRICHT (all in Holland); LIEGE, *Huy,* NAMUR, *Dinant* (in Belgium); *Givet,* Charleville, MEZIERES, Sedan, Verdun, *St Mihiel* (in France).
Merk, *l*	Breda.
Donge, *l*	*Oosterhout,* n.
Dommel, *l*	BOIS-LE-DUC.
Aa,	*Weert.*
Roer or Ruhr,	*Ruremonde,* H.; *Duren,* P.
Wurm,	Aix-la-Chapelle, P.
Jaar, *l*	*Tongres,* B.
Ourthe,	LIEGE, B.
Vesdre,	Verviers, B.; Eupen, P.
Sambre, *l*	NAMUR, *Charleroi,* B; *Maubeuge,* F.
Semoy,	ARLON, B.

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* For the full development of the Rhine, see under "Germany," as only the portion belonging to Holland and Belgium is given here. The Maas and Scheldt are given here in full.

Rivers.	*Towns.*
Scheldt,	*Goes* n., *Zierikzee* n., *Bergen-op-Zoom* (all on E. Scheldt), MIDDELBURG, Flushing (W. Scheldt), H.; ANTWERP, St Nicholas, *Temsche*, *Dendermonde*, Zele n., *Wetteren*, GHENT, *Oudenarde*, Renaix, Tournay, *Peruwelz* n., B.; *Condé*, *Anzin*, Valenciennes, Cambrai, F.
Rupel and Dyle,	*Boom*, Mechlin, Louvain, *Wavre*, B.
Nethe,	Lierre, *Gheel*, B.
Little Nethe,	Turnhaut, B.
Senne, *l*	*Vilvorde*, BRUSSELS, *Hal*, *Waterloo* n., *Soignies*, *Nivelles*, B.
Demer,	*Diest*, HASSELT, B.
Geete, *l*	St Trond n., *Tirlemont*, B.
Duvine, *l*	*Hamme*, Lokeren, B.
Dender,	*Dendermonde*, Alost, *Grammont*, *Lessines*, *Ath*, Leuze, B.
Lys, *l*	Courtrai, *Menin*, *Werwick*, B.; Tourcoing n., *Commines*, F.; *Warneton*, B.; *Armentières*, Bailleul n., *Merville*, *Aire*, F.
Mandel, *l*	Thielt, *Meulebeke*, *Ingelmünster*, *Iseghem*, B.
Deule,	Roubaix n., LILLE, *Carvin-Epinoy*, *Lens*, F.
Beurre,	*Hazebrouck*, F.
Lawe,	*Bethune*, F.
Scarpe, *l*	Douay, ARRAS, F.
Haine,	MONS, *Binche*, B.
Selle,	*Solesmes*, *Le Cateau*, F.
Ostend Canal,	Ostend, BRUGES, B.
Yser,	*Thorout*, B.
Yperlee,	Ypres, B.

14. **Lakes.**—None of importance since Lake Haarlem (in North Holland) was drained, except the Bies Bosch in North Brabant, which covers an area of 36 square miles. But there are numerous small lakes in Friesland, as Plussen Meer, Slote Meer, Sneeker Meer, and Bergum Meer. Forty small lakes in North Holland, and as many in South Holland, have been drained by means of windmills, the steam-engine not being employed for want of coal. Including Lake Haarlem, 350 square miles of admirable pasture-land, called *polders*, have thus been reclaimed.

15. **Climate** raw, damp, cold, foggy, and windy, and extremely disagreeable to foreigners. The winds blow incessantly, as if conscious that they have a twofold duty to perform—to carry off the stagnant vapours, and to keep several thousands of windmills in constant operation. Less patient, however, than his phlegmatic children, Æolus not unfrequently blows a perfect hurricane from the W. or S.W., overwhelming the land with fogs injurious to vegetation; or, forming an alliance with his brother Neptune, threatens to overthrow

every bulwark which the labours of centuries have erected, and convert Holland into one grand Zuyder Zee. The mean annual temperature at Amsterdam is 49°.8, of winter 35°.6, and of summer 64°.4. Annual rain, 26 inches. The winters are severe, the sky being generally overcast, bright days rarely exceeding forty in the year: little snow falls. The frosts are intense, and the Zuyder Zee is frequently frozen over in January, and the Great Helder Canal for three months in the year.

16. **Geology.**—The rocks consist almost exclusively of tertiary and super-tertiary strata, except in Luxembourg, which is nearly all secondary. Coal is absent, and stones of any size are rarely seen in the soil.

17. **Minerals.**—Immense deposits of turf; potter's clay, brick-clay, and a little bog-iron are found, but there are no other minerals. Building-stones are imported from Norway for the erection of piers, and for facings to the immense earthen dykes. The houses are usually built of brick, and of timber from the German forests, which is conveyed down the Rhine in immense rafts, varying from 700 to 1000 feet in length, from 50 to 90 in breadth, and directed by some hundreds of labourers, who construct a village of timber huts on its surface.

18. **Botany.**—The Botany of the Netherlands is much the same as in other European countries under the same latitude; but, as might have been expected, aquatic plants are more varied and numerous than elsewhere; and though there are no natural forests, plantations of oak, elm, beech, &c., are by no means rare; while the numerous lines of canal are usually lined with rows of willows and poplars.

Agriculture forms but a subordinate branch of rural industry, as the country is naturally better adapted for pasturage than for corn crops, the latter being usually quite insufficient for home consumption. The principal grain crops are rye, buckwheat, barley, and oats, together with some wheat in the southern provinces. Horticulture has attained a high degree of perfection, especially at Haarlem, which largely exports flower-roots and seeds. Other important crops are flax, hemp, rape-seed, chicory, mustard, hops, beetroot, and tobacco. Live stock and dairy produce are exported very extensively, as also poultry and honey.

19. **Zoology.**—Few wild animals are found except the rabbit and hare; waterfowl and reptiles are very numerous; storks and swans consider this country their home and their paradise; fish of various kinds abound on the coasts—as cod, turbot, sole, and other flat fish; there are extensive herring-fisheries, and numerous whale-ships annually visit the Greenland seas.

20. **Ethnography.**—The population of the Netherlands belongs exclusively to the Teutonic stock.

Languages.—The four prevailing languages belong to the Gothic family, and are all closely allied to the German. The chief of these is the *Dutch*, which is the national language, and which is spoken by all classes of society. It is merely a dialect of the *Flemish* which is spoken in Belgium and North Brabant, both languages having been originally the same, but the Dutch proper having been far more carefully cultivated (see for its characteristics under "Belgium," p. 262). The *Frisic* spoken by the uneducated classes in Friesland, Heligoland, and parts of Prussia, is more nearly allied to the Hoch Deutsch or High German, commonly called modern German; and lastly, the *German*, spoken in Dutch Luxembourg.

Religion.—About two-thirds of the population are Protestants, and one-third Romanists. The Reformed Church, by far the most numerous body of Protestants (1,600,000), is Calvinistic in doctrine and Presbyterian in government; and the other most important denominations are the Lutherans, who amount to 54,000, Baptists 38,000, and Jews 58,000. All forms of religion are freely tolerated, and all denominations placed on a perfect level.

Education is well attended to, there being one-eighth of the population constantly attending school, and nearly every child above ten years of age being able to read and write. The teachers are well paid: the fees are low, and the children of the poor are taught gratuitously. There are three universities—viz., those of Leyden, Utrecht, and Gröningen, the professors of which are paid by the State, and which are attended by 1119 students.

21. **National Character.**—The Dutch are proverbial for their cleanliness, frugality, industry, and attention to business; they are also distinguished for their love of freedom, of national independence, and for their courage and nautical skill. Though usually of a dull, phlegmatic temperament, they are charitable to the poor, faithful in all the domestic relations, and highly virtuous. Mendicity is prohibited throughout the kingdom.

22. **Literature.**—Ever since the revival of learning in Western Europe, the Dutch have distinguished themselves in almost every department of knowledge, but more especially in philology, criticism, and theology. Of the vast number of learned men to whom the Netherlands have given birth, the following are a few of the most illustrious :—

POETRY.—Johannes Secundus or Everard, James van Catz, Vondel, Gaspar, Brandt, William Bilderdyk.

PAINTING.—John van de Meer, surnamed "The Old," born 1627; another of the same name, styled "The Younger," famous for his pastoral scenes, born 1665; W. and D. Schellings; Limborch, Janssens, Moor.

HISTORY.—Dousa, Paul Merula, Heinsius, Bondam.

JURISPRUDENCE.—Vinnen, Leeuwen, Meerman, Grotius.

PHYSICAL SCIENCE.—John and Zachary Jansen, Huyghens, Almeloveen, Ruysch, Leuwenhoeck, Swammerdam, Sylvius, Boerhaave, Van Swieten, Gaubius, Camper, Van Swinden, Brugmans, S'Gravesande.

MENTAL SCIENCE.—Spinoza, Helvetius.

PHILOLOGY.—Heinsius, Golius, Leusden, Schrevelius, Perizonius, Burman, Hemsterhusius, Wetstein, Oudendorp, Valkenaer, Ruhnken, Lennep, Wyttenbach, Tollius, Sluiter.

CRITICISM.—Erasmus (born 1467), Erpenius, Drusius, Meursius, Gronovius, Clericus, Bos, Hoogeveen.

THEOLOGY.—Arminius, Gomar, Episcopius, Jansenius, Cocceius, Philip van Limborch, Witsius, Gerard Brandt, Vitringa, Voetius.

23. **Government, Finances, &c.**—The legislative power is vested in the king and two chambers called the States-General, one of which consists of deputies elected by the people every three years, and the other of members nominated by the Crown for life. The reigning sovereign is Frederick-William, who ascended the throne in 1849. From the year 1000 to the end of the eleventh century, Holland was divided into duchies, counties, and imperial cities; was successively subject to the Counts of Flanders and Burgundy (1383); became part of the empire of Charles V. in 1548; descended to his son Philip, and became an appendage to the crown of Spain: suffered severe religious persecutions in consequence; successfully asserted its independence in 1579 under William, Prince of Orange, and assumed the name of the "Seven United Provinces;" was conquered by the French in 1795, who established the Batavian Republic; was formed into a kingdom by Napoleon I., for his brother Louis, in 1806; became a department of France in 1810; was united to Belgium in 1815 under the name of the Kingdom of the Netherlands, and this arrangement subsisted till 1830, when Belgium became an independent monarchy; and, finally, by the treaty of London (1839), Belgium ceded to Holland the eastern parts of Limbourg and Luxembourg.

The standing *Army* in 1857 numbered 49,043 men and officers. The *Navy* consists of 88 vessels, carrying 2000 guns, besides 49 gunboats, carrying 174 guns.

The *Public Debt* in 1858 amounted to £94,250,000, being about £27 sterling to each inhabitant; the *Revenue* to £6,178,666; and the *Expenditure* to £6,115,666.

24. **Commerce and Manufactures.**—The *Imports* in 1858 were valued at £34,311,000, and the *Exports* at £28,187,000. The foreign trade of the Netherlands is chiefly carried on with Great Britain, Germany, the United States, and her own colonies, especially Java. At one time her commerce with other nations exceeded that of any other European state; and, considering the limited extent of the country, it is still large, and gradually increasing. At the commencement of 1858 the mercantile marine comprised 2428 ships, carrying 586,941 tons, besides a vast number of coasting vessels. The principal imports were colonial produce and manufactured goods, together with corn, wines, cotton, wool, and coal; and the chief exports consisted of butter, cheese, gin, clover-seed, the various manufactures of the country, and colonial produce, as tea, coffee, sugar, spices, &c. The principal *Manufactures* are linen, paper,

woollen and silk cloths, gin, snuff, tobacco, leather, cordage, saltpetre, and tobacco-pipes. Sugar-refining and shipbuilding are also extensively carried on.

25. **Inland Communication.**—Railways are comparatively few, and only recently constructed: one between Amsterdam and Haarlem, and thence to Leyden, the Hague, and Rotterdam; and another from Amsterdam to Utrecht, Arnhem, and the German frontier. In 1858 the number of miles open for traffic was 182.

The *Canals* are very numerous, and unrivalled in magnificence. They are found along all the great dykes which serve as barriers to the ocean, and have generally an excellent road beside them. The following are only some of the most important: The Great Canal, between Amsterdam and the Helder, 50 miles long, 125 feet broad, and 21 feet deep, admitting two frigates abreast; the Nieuwer Sluis, between Amsterdam and Utrecht; another from Amsterdam to Haarlem, Leyden, Delft, the Hague, Rotterdam, and Gorkum; an immense canal from Bois-le-Duc to Maestricht; one from Mappel to Assen; from Gröningen to the Dollart; from Gröningen to Delfzyl; from Gröningen to Haarlem by Dokkum and Leeuwarden. Passengers are conveyed along these canals at the rate of four miles per hour.

26. **Foreign Possessions.**—When Belgium was separated from Holland in 1830, the latter retained all the colonies, which are as follow:—

	Area in Sq. Miles.	Population (1856).
AFRICA.		
Settlements on the Guinea Coast, ...	10,625	100,000
ASIA.		
Parts of Sumatra, Java, Bali, Lombok, Timor, Banda and Amboyna, Papua, Moluccas, Celebes, Borneo, Banka, Rhio (near Singapore), ...	520,179	16,354,000
SOUTH AMERICA.		
Dutch Guiana, Curaçao (N. of Venezuela), St Eustatius (Leeward Islands), ...	54,187	82,761
Total Colonial Possessions, ...	584,991	16,536,761
The Netherlands, ...	13,616	3,523,823
Grand Total in 1856, ...	598,607	20,060,584

DENMARK.

1. **Boundaries.**—N. the Skager Rack, which separates it from Norway; W. the German Ocean; S. Hanover, from which it is separated by the Elbe; E. Mecklenburg, the Baltic, the Sound, and the Cattegat—the latter two of which divide it from Sweden. Lat. 53° 22′—57° 45′, N.; lon. 8° 5′—12° 35′ E. Copenhagen, the capital (lat. 55° 40′), which is almost exactly in its central latitude, is on the same parallel with Edinburgh and Moscow: while the central meridian passes through Kiel, Christiania, Hamburg, Gotha, Lucca, Elba, and Tunis.

2. **Form.**—The form is extremely irregular, consisting of a peninsula and various groups of islands; but the mainland resembles a cornucopia, supported by Germany, with the mouth turned to the north-east. Extreme length from the Skaw to Lauenburg, 300 miles; greatest breadth, from Elsinore in Seeland to the Horn in Jutland, 185 miles.

3. **Coast Line.**—The seaboard is very extensive, amounting to 5000 miles, including the islands; of which 1110 miles belong to the mainland, which is greatly indented. The latter gives one mile of seaboard to every ten miles of area, a ratio higher than in any country in Europe, save Greece.

4. **Area.**—The area amounts to 21,856 square miles, or nearly three times the size of Wales, affording five acres to each inhabitant; but including Iceland (area, 37,800 square miles), and the Faröe Isles (area, 510 square miles), the whole amounts to 60,500 square miles.

5. **Population.**—In 1858 the population of Denmark proper, including the Duchies, was 2,468,713; but including Iceland (population, 64,603) and the Faröe Isles (population, 8651), the whole amounted to 2,541,967. (See below, "Foreign Possessions.")

6. **Political Divisions.**—Denmark proper is divided into four provinces, viz., the Duchies of Holstein and Lauenburg in the south between the Elbe and the Eyder, and forming a member of the Germanic Confederation; the Duchy of Schleswig, between the Eyder on the south and the Konge and Kolding on the north; Jütland, in the north of the peninsula; and the Danish Archipelago, between the mainland and Sweden. Iceland lies 700 miles west of Norway, and 300 miles east of Greenland; while the Faröe Isles are nearly midway between Iceland and Shetland.

Holstein and Lauenburg.—Glückstadt 6, Altona 32, Lauenburg 4 (Elbe), Rendsburg 12 (Eyder), Kiel 14 (Kiel Fiord).

Towns between 5000 and 10,000 Inhabitants.—Itzehöe, Elmshorn, Preez, Ratzeburg.

Schleswig.*—Schleswig 12 (Schlei Fiord), Flensburg 16 (Flensburg Fiord).

Haderslaben, Tondern, Tönningen, Frederickstadt, Apenrade, Husum.

Jütland.—Aalborg 8 (Lymfiord), Aarhuus 7 (Molle Aa).

Fredericia, Horsens, Randers, Viborg, Ribe, Frederikshavn.

Danish Archipelago.—COPENHAGEN 144, Elsinore 8 (E. coast of Zealand), Odensee 11 (in the north of Fünen).

Nyborg, Svendborg, in Fünen ; Rönne, in Bornholm.

Iceland.—Reykiavik 1.2 (S.W. coast), Akreyri (Eyja Fiord).

Faröe Isles.—Thorshavn 720 (S. coast of Strömöe).

7. **Descriptive Notes.**—*Glückstadt*, a small town on the Elbe, thirty miles from its mouth ; the inhabitants chiefly employed in navigation. *Altona*, an important trading and commercial city on the right bank of the Elbe, and only two miles distant from Hamburg : next to the capital, it is the most populous and flourishing city in the kingdom ; has various manufactures, shipbuilding docks, and 238 trading vessels. *Rendsburg*, on the Eyder, is a place of some note ; it has a brisk trade, and is well fortified. *Kiel*, near the head of the Schleswig-Holstein Canal, from which it derives its importance, is the seat of a university, of various manufactures, and of steam and other packet communication with the capital and other places. *Lauenburg*, the capital of the small duchy of same name, on the Elbe, maintains a brisk transit trade. *Schleswig*, once a member of the Hanseatic League, has manufactures of lace, woollen stuffs, leather, sugar, and earthenware. *Flensburg*, a flourishing seaport, with an active general trade. *Aalborg* (Eeltown), near the mouth of the Lymfiord, deriving its name from the great number of *eels* found in its neighbourhood, has a school of navigation, a soap-manufactory, a herring-fishery, and steam communication with the capital. *Aarhuus* and *Randers*, on the east coast, are small manufacturing towns with considerable trade. COPENHAGEN (Dan. *Kjöbenhavn*, "Merchants' Haven"), the capital of Denmark, and the centre of its commerce, is a city of 144,000 inhabitants, elegantly built and strongly fortified ; has an arsenal, shipbuilding docks, &c., being the sole station for the

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[*] The following rules apply only to strictly Danish words :—

a, e, i, o, u=the same vowels in German and Italian ; but *y*=German *ü ;* and *w*, which is found only in derivatives from the German=English *v*.

aa=*ō* in stone, as Aalborg, Aarhuus (*Ōl-borg, Ōr'hoos*).

ä or *ae*=*a* in fate, or German *ä*, as Aeroe, Faroe (*A'ro, Fā'ro*).

ie=*ee* in feet, or German *ie*, as Kiel (*Keel*).

io=English long *ū*, as Kioge, Lymfiord (*Kū'ghee, Lüm-fiūrth'*).

ei and *ey*=*i* in pine, or *ei* in German, as Eyder, Schlei (*I'der, Shlī'*).

ii or *y*=*ü* in German, as Liimfiord or Lymfiord (*Lüm-fiūrth'*).

oe or *ö*=*ö* in German, as Rönne, Tönningen (*Rön'ne, Tön'ning-en*).

uu=*u* in rule, as Aarhuus (*Ōr'hoos*).

d between two vowels=*th* in this, or like Spanish *d* in a similar position, as Apenrade (*Ap-en-rà'the*).

g is always hard, but at the end of a word it is sounded very slightly, so as to resemble *h*, as Viborg (*Vee-borh*).

j=*ÿ* in yes, as Jütland (*Yüt'land*).

n when followed by *g* is nasal, as Tönningen (*Tön'ning-en*).

v is usually=*v* in English, but after *a* it has a vowel sound, as Frederikshavn (*Fred-er-iks-haun'*).

navy; a celebrated university, several superb palaces, most of which are now converted into libraries, museums, and picture-galleries, among which may be mentioned the Museum of Northern Antiquities, and the Thorwaldsen Museum: Lord Nelson gained here a great naval victory over the Danish fleet in 1801, and in 1807 it was bombarded, and the Danish fleet taken to England. *Elsinore*, or *Elsineur* (Dan. *Helsingör*), on the Sound, at its narrowest part, and only three miles from the Swedish coast, having on the north the strong castle of Kronborg: here are levied "the Sound dues" on all foreign merchant-vessels entering or leaving the Baltic, which, in 1851, amounted to nearly 20,000 ships, yielding £154,000 of toll. *Odensee*, the principal town in Fünen, and the residence of the governor, has manufactures of woollens and iron wares. *Reykiavik*, the capital of Iceland, with only 1200 inhabitants, is the principal town in the island; it is an archbishop's see, the seat of a college (which has a president, eight professors, and about 100 students), of the Icelandic Society, an observatory, and library. *Akreyri*, on the Eyja Fiord, in the north, is, next to the capital, the most important trading place in the island. *Thorshavn*, the capital of the Faröe Isles, consists of about 100 wooden huts, with an hospital, a Latin school, and a fortified harbour.

8. **Capes.**—The Skaw in N.E. of Jutland; Capes Hertberg and Horn on W. of Jütland; North Cape in the N.W., and Skagen in the S.W. of Iceland.

9. **Islands.** — Seeland or Zealand, Fünen, Alsen, Langeland, Aeröe, Laaland, Falster, Moen, all between Schleswig and Sweden; Femern, E. of Holstein; Bornholm, S. of Sweden; Anholt and Læsöe, in the Cattegat; Fœhr, Syltöe, Romöe, W. of Schleswig; Iceland, E. of Greenland; Faröe Isles, between Iceland and the Shetland Isles.

10. **Bays, Straits, and Fiords.**—Skager Rack, between Jütland and Norway; Cattegat, between Jütland and Sweden; the Sound, between Seeland and Sweden; Great Belt, between Seeland and Fünen; Little Belt, between Fünen and Schleswig; Lymfiord, Nyssum Fiord, Kingkiöbing Fiord, and Ripen Deep, in Jütland; Colberg Bay and Kiel Fiord, in N.E. of Holstein; Flensburg Fiord, and Gulf of Apenrade, in E. of Schleswig; Odensee Fiord, in Fünen; Ise Fiord, in Seeland.

11. **Mountains.**—There are no mountains, or even hills, either on the mainland or in the adjacent islands; the surface is one uniform plain, elevated only a few feet above the sea, with a few eminences rarely exceeding 500 feet in elevation. Iceland, however, is highly mountainous; Oræfajökull, 6405 feet; Snäfell, 5968 feet; and Hecla, 5110 feet. The highest summit in the Faröe Isles attains an elevation of 2864 feet.

12. **River-Basins.**—Unimportant (see next section).

13. **Table of Rivers and Towns.** — The following table shows the position of all the towns in Denmark containing a population of 5000 inhabitants and upwards. These are thirty in number, including eight towns above 10,000. There are only two that have a population above 20,000—viz., Copenhagen

and Altona, the former of which nearly attains to 150,000. The thirty towns stand on twenty-one rivers, or arms of the sea, which are called *fiords*.

Basins inclined to the Baltic.

Rivers.	*Towns.*
The Sound,	COPENHAGEN, *Elsinore.*
Great Belt,	Odensee, n., Nyeborg, Svendborg.
Trave,	LUBECK (in Germany).
Wakenitz,	*Ratzeburg.*
Kiel Fiord,	Kiel.
Schwentin,	*Preez.*
Schlei Fiord,	SCHLESWIG.
Flensburg Fiord,	Flensburg.
Gulf of Apenrade,	*Apenrade.*
Hadersleben Fiord,	*Hadersleben.*
Little Belt,	*Assens, Fredericia.*
Horsens Fiord,	*Horsens.*
Molle Aa,	*Aarhuus.*
Guden Aa,	*Randers, Viborg.*
Lymfiord,	AALBORG.
N.E. coast of Jutland,	*Fladstrand,* or *Frederikshavn.*

Basins inclined to the North Sea.

Rips Aa,	*Ribe,* or *Ripen.*
Widaa,	*Tondern.*
Haver,	*Husum.*
Eyder,	*Tönningen, Frederickstadt,* Rendsburg.
Elbe,*	GLÜCKSTADT, Altona, LAUENBURG.
Stör,	*Itzehöe, Neumünster.*
Krückau,	*Elmshorn.*

14. **Lakes**, extremely numerous, but all of them very small: the most important are Mossöe and Fiel, in Jütland; Ploen See and Selenter See, in Holstein; Arve and Tis, in Seeland.

15. **Climate**, much milder than in Germany, notwithstanding its higher latitude, but very humid and cloudy: storms are rare, and of short duration; average rainy days, 137; snowy days, 32; prevailing winds, W. in spring and summer, and S.W. in winter and autumn. Mean annual temperature at Copenhagen, 46° 6′; winter, 31° 3′; and summer, 62° 7′.

16. **Geology**, almost wholly tertiary; but small patches of secondary in Jütland, Seeland, and Bornholm; trap-rocks in the Faröe Isles, and trap and volcanic rocks in Iceland, enclosing numerous interesting minerals, as green-earth, galactite, lava, pitchstone, &c.

17. **Minerals.**—Denmark is peculiarly devoid of minerals: an inferior variety of coal, with blue marble, potter's clay, and building-stone, in Bornholm; sandstone, limestone, gypsum, clay, and a

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* For the complete development of the Elbe, see under "Austria."

little salt in Holstein; green-earth in Faröe Isles and Iceland, and lava, basalt, &c. in Iceland.

18. **Botany.**—The indigenous vegetation does not differ essentially from that of Northern Germany. Forests are not extensive, are mostly confined to the east coast and the islands, and usually consist of ash, alder, oak, and birch. In Iceland, forests were formerly numerous, but it is now destitute of trees, except a few stunted birches; its flora is nearly allied to that of Scandinavia, comprising mosses, lichens, and a few shrubs and other flowering plants. According to Vahl and Babington, the number of flowering plants in Iceland amounts to 414 species, of which 132 are monocotyledons, and 282 dicotyledons.

Agriculture.—Denmark is pre-eminently an agricultural country: the soil, almost entirely alluvial, is well adapted for cultivation. The numerous marshy districts yield excellent pasturage: rearing of horses and cattle, and dairy produce, form the chief objects of rural industry. More corn is raised than is required for home consumption—the principal crops being rye, barley, oats, wheat, and buckwheat; besides potatoes, hemp, lint, tobacco, and oats. No grain of any kind can be raised in Iceland, but cabbage and potatoes are cultivated; and barley is the only grain that comes to maturity in the Faröe Isles.

19. **Zoology.**—Since the decline of the great forests the larger wild animals have disappeared; the wild-boar is sometimes met with, and deer, stags, roes, hares, foxes, martens, polecats, rats, and other small quadrupeds, are abundant. Among *birds* may be mentioned the eider-duck, so famous for its down, the wild-goose, partridge, snipe, and thrush; swans in the Lymfiord; eagles and vultures are rarely seen. *Fishes* comprise the herring, turbot, torsk, and salmon. Oyster-banks occur on the east coast of Jütland; and seal-fish on the island of Anholt.

20. **Ethnography.**—The people are of the Gothic stock, but divided into various races, all of whom employ dialects belonging to one or other of the two great divisions of the Gothic or Teutonic family. The inhabitants of Holstein, Lauenburg, and a portion of Schleswig, are Germans, and speak the German tongue; those of Jütland, the islands in the Baltic, and three-fourths of Schleswig, are Danes or Normans, and speak Danish, a Scandinavian tongue closely allied to the Icelandic. Frieslanders occupy the west coast of Schleswig, together with the adjacent islands, and employ the Frisian, a dialect of the Dutch; while the Normans people Iceland and the Faröe group, where the Icelandic and Faröese, closely-related dialects, are respectively spoken. The Icelandic, or Norse, also called the Scandinavian Proper, is merely old Danish, and is the least-corrupted dialect of the Scandinavian family of tongues; but its pronunciation is harsher than the Danish, which is considered the softest language in Europe—the consonants being pronounced so softly as to be almost imperceptible.

Religion.—Christianity became the national religion under Canute the Great, in the beginning of the eleventh century; the Lutherans greatly outnumber all other sects, which, however, since 1849, are freely tolerated—viz., Romanists, Calvinists, and Moravians; and Lutheranism is supported by the State in all parts of Denmark.

Education is widely diffused, attendance at the primary schools being compulsory and gratuitous; and every adult inhabitant can read and write. There are about 20 secondary or higher schools distributed over the kingdom, where fees are paid, and where attendance is optional; and two universities,—one at Copenhagen, with 39 professors, 1100 students, and a library of 100,000 volumes; and the other at Kiel, with 31 professors, 250 students, and a library of 100,000 volumes.

21. **National Character.**—The Danes are characterised by a strong, well-built, muscular frame, with regular features, blue eyes, and light hair; not easily roused, but susceptible of strong, enduring feelings; of a patient disposition, and requiring much time for deliberation; more remarkable for common sense than for wit, and highly virtuous in their morals.

22. **Literature.**—The following list includes only a few of the most eminent literary names in Denmark:—

POETRY.—Baron Holberg, the dramatist and historian, Ewald, the famous lyric poet; Falster, Sneedorf, Tullen, Wessel, Oehlenschläger, Baggesen, Hertz.

HISTORY.—Sueno, Saxo-Grammaticus, Holberg, Suhm, Möllmann, and B. G. Niebuhr.

GEOGRAPHY AND TRAVELS.—Carsten Niebuhr, and Chevalier Brönstadt.

SCIENCE.—Tycho Brahe, the eminent astronomer; Oerstedt, the electrician; Schouw, the botanist; Rask, and J. Olshausen, the philologists; Gruntvig, Petersen, and Rafn, the archæologists; Mynster, Möller, Lindberg, Treschov, Smith, and Twesten, the theologians.

PHILOSOPHY AND CRITICISM.—Rothe, Rahbek, and Kraft.

FINE ARTS.—Thorvaldsen, the eminent sculptor; Hausen and Malling, the architects; Tuel, the portrait-painter; Gebauer, the animal-painter; Eckersberg, the historical painter; Dahl, the landscape-painter; Weber, the great German composer.

ROMANCE.—Ingemann, Blicher, Kruse, and Hauch.

23. **Government, &c.**—Since 1834 the government, formerly absolute, has been a constitutional monarchy; the king, as Duke of Holstein and Lauenburg, has three votes in the Germanic Diet. Schleswig and Holstein retain their ancient laws, which differ from those of Denmark proper. The *Revenue* for 1858 amounted to 17,000,000 crowns, or £2,408,000 sterling; the *Expenditure* for the same year equalled the receipts, and the *Public Debt* was £16,290,000. Of the revenue of Denmark upwards of £153,000 a-year is derived from the "Sound" Dues, being tolls exacted from the ships of all nations entering or leaving the Baltic through that

strait; but, by a treaty effected in 1857, these dues are to be abolished in respect to the ships of all the nations that have signed the treaty, being redeemed by each country paying the interest of a certain sum mutually agreed on. In 1851 no fewer than 20,000 ships passed the Sound. The *Military Force* in time of peace numbers about 25,000 men. *Naval Force* (1858), 116 vessels (including 4 ships of the line, 6 frigates, 6 steamers, and 67 gunboats), carrying 932 guns.

24. **Commerce and Manufactures.**—The commerce is less considerable than its extremely favourable position would indicate. *Exports*, in 1852, £1,941,292; *Imports*, same year, £3,247,352; number of merchant-ships in 1847, 3905. The exports consist chiefly of agricultural produce and live stock; and the principal imports are articles of colonial produce, and manufactured goods from Britain, France, and other neighbouring countries, together with iron, steel, hardware, coals, salt, tar, timber, fruits, wine, and glass. The principal ports are Copenhagen, Altona, Kiel, Flensburg, and Aalborg. The *Manufactures* are inconsiderable, and consist, for the most part, of linen and woollen articles for home consumption; brewing and distillation are extensively prosecuted; and some cotton and silk goods are manufactured in the large towns.

25. **Internal Communication.**—Owing to the flatness of the country and the alluvial character of the soil, the ROADS are very inferior, the best being in Seeland, Fünen, and the Duchies; but water-communication is abundant, there being numerous arms of the sea deeply indenting the land in all parts of the country.

CANALS.—The *Schleswig-Holstein* or *Kieler Canal*, connecting the Eyder with the Baltic, and permitting vessels of 120 tons burden to pass. The *Stecknitz Canal*, one of the oldest in Europe, uniting the Elbe and Trave. The *Aggar Canal*, connecting the Lymfiord with the North Sea; besides two others—one in Seeland, and one in Fünen.

RAILWAYS.—One from Altona to Kiel, with a branch to Glückstadt; another from Neumünster to Rendsburg and Husum; a third from Hamburg, through Lauenburg, to Berlin; and a fourth from Copenhagen, by Roeskilde, to the west coast of Seeland.

26. **Foreign Possessions.**—Besides Iceland and the Faröe Islands, which have been already noticed, Denmark possesses the extensive region of Greenland, with its thirteen settlements and two mission stations, the principal of which are Frederik's Harbour, Julian's Harbour, and Good Hope; Disco Island, west of Greenland; the islands St Croix, St Thomas, and St John, in the West Indies. The establishments on the Guinea coast were purchased by Britain in 1850; the town of Tranquebar, with its districts on the Coromandel coast, and the town of Serampore in Bengal, were transferred to Britain in 1846; while the Nicobar Islands, in the Bay of Bengal, were abandoned in 1848 on account of their insalubrity.

POSSESSIONS OF DENMARK.

	Area in Sq. Miles.	Population (1855.)
Faröe Isles,	510	8,651
Iceland,	37,800	64,603
Greenland,	380,000	9,892
West Indies,	110	37,137
Total Colonies,	418,420	120,283
Kingdom of Denmark,	21,856	2,468,713
Total Danish Possessions,	440,276	2,588,996

GERMANY.

THE term Germany (in the German language, *Deutschland;* in French, *Allemagne*) is employed by writers on geography in two different acceptations. Usually, and more properly, it denotes all those states and portions of states which send representatives to the Federal Diet at Frankfurt-on-the-Main. In this sense it embraces the thirty minor independent states hereafter enumerated, besides large portions of Austria, Prussia, Denmark, and the Netherlands. Extends from lat. 44° 46′ to 54° 50′ N., and from long. 6° to 19° E.; and is bounded on the N. by the Baltic, the Danish province of Schleswig, and the North Sea; on the W. by the Netherlands, Belgium, and France; on the S. by Switzerland, Lombardy, Venetia, and the Adriatic; and on the E. by Croatia, Hungary, Galicia, Russian and Prussian Poland. Frequently, however, the term is used in a greatly more limited sense, denoting merely the thirty minor independent states enumerated in the following table, and excluding the provinces that belong politically to Austria, Prussia, Denmark, and the Netherlands. Germany, in its widest acceptation, embraces a large portion of Central Europe, and is of a square compact form; greatest length from the north of Pomerania to the Adriatic, 690 miles; extreme breadth from the western side of Dutch Luxembourg to the frontier of Galicia, 615 miles; area, 244,642 square miles, or nearly twice the size of the British Isles; population (in 1855), 43,712,174, or twice that of Great Britain. The coast-line is estimated at

675 miles, 75 of which belong to the Adriatic, and the remainder to the Baltic and North Sea. Austria embraces nearly one-third of the whole extent of Germany; Prussia about two-sevenths. The Duchy of Holstein and Lauenburg is the only portion of Denmark that is included within the limits of Germany; while Limbourg and Luxembourg entitle the King of the Netherlands to a seat at the Diet.

In the following table will be found the entire number of states composing the Germanic Confederation, together with their political designation, area, population, and date of last census:—

THE GERMANIC CONFEDERATION.

STATES.	Title.	Area in English Sq. Miles.	Population.	Date of Census.
Austria (part of),............	Empire	76,075	13,382,189	1854
Prussia (part of),............	Kingdom	72,016	12,937,228	1853
Holstein and Lauenburg,.	Duchy	3,974	550,000	1853
Luxembourg & Limbourg,	Grand-Duchy	1,860	394,262	1853
Total dependencies of other States,..	...	153,925	27,263,679	
Anhalt-Bernburg, ...	Duchy	319	53,475	1855
Anhalt-Dessau-Köthen,...	Duchy	595	114,850	1855
Baden, ...	Grand-Duchy	5,904	1,314,837	1855
Bavaria,........................	Kingdom	29,637	4,541,556	1855
Bremen,........................	Free City	97	88,856	1855
Brunswick, ...	Duchy	1,427	269,213	1857
Frankfurt, ...	Free City	38	74,784	1855
Hamburg,.....................	Free City	135	220,401	1857
Hanover, ...	Kingdom	14,846	1,819,777	1855
Hesse-Cassel, ...	Electorate	4,439	755,350	1854
Hesse-Darmstadt, ...	Grand-Duchy	3,761	836,424	1855
Hesse-Homburg, ...	Landgraviate	106	24,937	1855
Liechtenstein, ...	Principality	60	7,150	1853
Lippe-Detmold, ...	Principality	437	105,490	1855
Lippe-Schaumburg, ...	Principality	171	29,848	1855
Lubeck, ...	Free City	110	55,423	1857
Mecklenburg-Schwerin,...	Grand-Duchy	4,845	539,231	1857
Mecklenburg-Strelitz,.....	Grand-Duchy	1,051	99,750	1853
Nassau, ...	Duchy	1,751	434,064	1857
Oldenburg & Kniphausen,	Grand-Duchy	2,421	287,163	1855
Reuss, ...	Principality	595	112,600	1857
Saxony, ...	Kingdom*	5,770	2,039,075	1855
Saxe-Altenburg, ...	Duchy	510	133,593	1857

THE GERMANIC CONFEDERATION (*continued*).

STATES.	Title.	Area in English Sq. Miles.	Population.	Date of Census.
Saxe-Coburg-Gotha, ...	Duchy	761	150,878	1855
Saxe-Meiningen, ...	Duchy	971	165,662	1857
Saxe-Weimar, ...	Grand-Duchy	1,405	263,755	1855
Schwartzburg-Rudolstadt,	Principality	370	68,974	1855
Schwartzburg - Sondershausen, ...	Principality	328	61,452	1855
Waldeck, ...	Principality	464	58,132	1855
Würtemberg, ...	Kingdom	7,423	1,788,720	1856
Thirty Independent States, ...	...	90,717	16,448,495	
Parts of Austria, Prussia, Denmark, and Netherlands, ...	...	153,925	27,263,679	
Total Germanic Confederation, ...	...	244,642	43,712,174	

The 34 states above enumerated embrace 1 Empire, 5 Kingdoms, 1 Electorate, 7 Grand-Duchies, 8 Duchies, 7 Principalities, 1 Landgraviate, and 4 Free Cities. We shall first consider Western Germany, or the 30 smaller states, and afterwards proceed to the consideration of Prussia and Austria.

WESTERN GERMANY, OR THE SMALLER STATES.

1. **Boundaries.**—N., the Baltic, Holstein, and the North Sea; W., the Netherlands, Westphalia, Rhenish Prussia, and France; S., Switzerland and the Tyrol; E., the Archduchy of Austria, Bohemia, and Prussia. Lat. 54° 16′ to 47° 20′ N., and long. 6° 40′ to 15° 3′ E. Gotha, in the centre, is nearly on the same parallel as Dover, Brussels, Dresden, Breslau, Lublin, Uralsk, and Irkutsk; and on the same meridian as Christiania, Kiel, Lucca, Elba, Tunis, and the extreme east of the Gulf of Guinea.

2. **Form.**—The form is extremely irregular as a whole, and consists of two main divisions, which are nearly separated from each other by the Prussian states. Of these the southern is by far the larger, and remotely approximates to a square; the northern is triangular, with the apex pointing southward. Greatest length from N. to S., 485 miles; breadth along the parallel of 51°. 333 miles.

3. **Coast-Line** very small, not exceeding 200 miles, of which 80 belong to the Baltic, and 120 to the North Sea, being 1 mile of coast to every 450 square miles; but the great rivers are all navigable, and there is no lack of water-communication.

4. **Area,** 90,717 square miles, or almost exactly the size of Great Britain, and affording 3½ acres to each inhabitant.

5. **Population,** 16,448,495, or somewhat less than that of England without Wales, and allowing 180 persons to every square mile.

6. **Political Divisions.**—Western Germany consists at present of thirty sovereign and independent states, which may be arranged into three groups—viz. Northern, Central, and Southern States.

THIRTEEN NORTHERN STATES.

Hanover.*—HANOVER 42, Göttingen 10 (Leine), Hildesheim 14 (Innerste), Celle or Zell, 12 (Aller), Clausthal 10 (Zellerbach), Lüneburg 12 (Ilmenau), Emden 12 (Emden Canal), Osnabrück 12 (Hase).

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* Rules for pronouncing German proper names, with appropriate examples:—

VOWELS.—*a* long, as in far; short, as in fat.

e long=*a* in fate; short, as in met.

i long and *y*=Italic *i*, or *i* in machine.

o long, as in stone; short, as in yon.

u long=Italic *u*, or *u* in rule; short, as in full.

DIPHTHONGS.—*ä* or *ae*=*a* in fate, as Grätz or Grætz (*Graits*).

ai, *ay*, *ei*, *ey*=*ey* in eye, as Main or Mayn, Leine, Leyden (*Mine*, *Lī'nch*, *Lī'den*).

au=*ou* in hour, as Augsburg, Clausthal (*Ougs'boorg*, *Clous'tal*).

eu=*oi* in voice, as Reuss, Neuburg, Baireuth (*Rois*, *Noi'boorg*, *Bī'roit*).

ie=*ee* in feet, as Wien, Nienburg, Wiesbaden (*Veen*, *Neen'boorg*, *Vees-bah'den*).

ö or *oe*=*eu* in French, or *ao* in Irish: there is no corresponding sound in English—Göttingen, Königsberg, Schönberg.

ü or *ue*=*u* in the French word *bruler*: it has no parallel English sound—*e.g.* Münden, Nürnberg, Lüneburg.

The CONSONANTS are sounded as in English, with the following exceptions:—

d final=*t* in English, as Detmold, Gmünd, Stuttgard (*Det'molt*, *Gmünt*, *Stut'gart*).

c before *e*, *i*, *y*=*ts*, as Celle (*Tsel'leh*).

ch=Scotch *ch* or Irish *gh* in Loch Ness, Lough Foyle, but before *s radical*=*k*; as Eisenach, München, Sachsen (*I'zen-ach*, *Mün'chen*, *Sak'sen*).

g is hard before *e*, *i*, *y*, as Giessen, Meiningen (*Ghees'sen*, *Mī'ning-en*).

h is pronounced only at the beginning of a word or of a radical syllable; when after a vowel, it lengthens the vowel, as Hanover, Jahde (*Han'o-ver*, *Yâ'deh*).

j=*y* in yes, as Jena, Jaxt (*Ye'na*, *Yaxt*).

s between two vowels has the sound of *z*; but elsewhere it is always sharp, as Eisenach, Osnaburg (*I'zen-ach*, *Os-na-boorg*).

ss and *sz*=*s* in this, as Cassel, Giessen (*Cas'sel*, *Ghees'sen*).

sch=*sh* in shine, or *ch* in French and Portuguese, as Schleitz, Schwartzburg (*Shlites*, *Schwarts'boorg*).

th=*t*, as Gotha, Clausthal (*Go'ta*, *Clous'tal*).

v between two vowels is equal to *v* in English; elsewhere it is equal to *f* in life, as Hanover, Vogelberg (*Han'o-ver*, *Fo'ghel-berg*).

w is nearly equal to English *v*, as Waldeck, Wismar (*Val'deck*, *Vis'mar*).

z and *tz*=*ts*, as Zellerbach, Wartzburg (*Tsel'ler-bach*, *Varts'boorg*).

Towns between 5000 and 10,000 Inhabitants.—Eimbeck, Osterode, Verden, Goslar, Nienburg, Harburg, Hameln, Münden, Stade, Norden, Leer, Aurich.

Oldenburg and **Kniphausen.**—OLDENBURG 8 (Hunte), Kniphausen 4 (Jahde), Berne 7 (Berne).

Mecklenburg-Schwerin.—SCHWERIN 20 (L. Schwerin), Rostock 23 (Warnow), Wismar 11 (N. coast).

Grabow, Ludwigslust, Parchim, Gustrow.

Mecklenburg-Strelitz.—NEU STRELITZ 6 n. (Havel).

New Brandenburg, Schönberg.

Brunswick.—BRUNSWICK 40, Wolfenbüttel 9 (Ocker).

Helmstadt.

Lippe-Detmold.—DETMOLD 4.7 (Werre).

Lippe-Schaumburg.—BÜCKEBURG 2 (Aue).

Anhalt-Dessau-Köthen.—DESSAU 12 (Mulde).

Zerbst, Köthen.

Anhalt-Bernburg.—BERNBURG 7 (Saale).

Four Free Cities.—FRANKFURT 73 (Main), BREMEN 88 (Weser), HAMBURG 211 (Elbe), LUBECK 48 (Trave).

THIRTEEN CENTRAL STATES.

Nassau.—WIESBADEN 12 (Salzbach), Ems 3 (Lahn).

Waldeck.—AROLSEN 2 (Aar).

Corbach, Pyrmont.

Hesse-Darmstadt.—DARMSTADT 27 (Darm), Mayence or Mainz 37 (Rhine), Offenbach 13 (Main).

Worms, Bingen, Giessen.

Hesse-Homburg.—HOMBURG 5 (Eschbach).

Hesse-Cassel.—CASSEL 32, Fulda 10 (Fulda), Hanau 15 (Main).

Hersfeld, Eschwege, Schmalkalden, Marburg.

Schwartzburg-Sondershausen.—SONDERSHAUSEN 5 (Wipper), Arnstadt 6 (Gera).

Schwartzburg-Rudolstadt.—RUDOLSTADT 6 (Saale), Frankenhausen 5 (Wipper).

Saxe-Coburg-Gotha.—GOTHA 14 (Leine), Coburg 10 (Itz).

Saxe-Meiningen-Hildburghausen.—MEININGEN 6, Hildburghausen 5 (Werra).

Saxe-Weimar-Eisenach.—WEIMAR 11 (Ilm), Eisenach 10 (Hörsel).

Jena.

Saxe-Altenburg.—ALTENBURG 16 (Pleisse).

Schmöllin, Ronneburg.

Reuss.—GREITZ 7, Gera 11 (White Elster).

Schleitz, Lobenstein.

Saxony.—DRESDEN 109 (Elbe), Leipsic 70, Plauen 12 (White Elster), Glauchau 10 (Mulde), Freiberg 14 (Münzbach), Chemnitz 28 (Chemnitz).

Oschatz, Meissen, Pirna, Wardau, Reichenbach, Grimma, Meerane, Zwickau, Lössnitz, Schneeberg, Dobeln, Rosswein, Nossen, Mittweida, Hainichen, Frankenberg, Zschoppau, Annaberg, Grossenhain, Bautzen, Zittau.

FOUR SOUTHERN STATES.

Bavaria.—MUNICH 132, Landshut 10 (Isar), Passau 11, Straubing 10, Regensburg or Ratisbon 25 (Danube), Amberg 10 (Vils), Augsburg 37 (Lech), Spires or Speyer 10 (Rhine), Aschaffenburg 10, Würzburg 27 (Main), Bamberg 25, Erlangen 12, Fürth 16, Schwabach 10 (Regnitz), Nürnberg 45 (Pegnitz), Anspach 14 (Rezat), Baireuth 17 (Red Main).

Freising, Ingolstadt, Neuburg, Eichstadt, Dinkelsbuhl, Nordlingen, Memmingen, Kempten, Landau, Zweibrücken or Deux-Ponts, Pirmasens, Kaiserslautern, Kitzingen, Schweinfurt, Rothenburg, Hof.

Würtemberg.—STUTTGART 46 (Nesenbach), Reutlingen 12 (Eschatz), Ludwigsburg 11, Heilbronn 14 (Neckar), Ulm 21 (Danube).

Cannstadt, Esslingen, Kirchheim, Tübingen, Rottenburg, Hall, Gmünd, Goppingen, Ehningen, Tuttlingen.

Baden.—CARLSRUHE 25 n., Mannheim 26 (Rhine), Heidelberg 13 (Neckar), Freiburg 16 (Dreisam).

Constance, Weinheim, Pforzheim, Bruchsal, Bretten, Rastadt, Lahr, Baden-Baden.

Liechtenstein.—LIECHTENSTEIN or Vaduz 2 (Rhine).

7. **Descriptive Notes.**—Western Germany contains one hundred and sixty-nine towns of above 5000 inhabitants ; sixty above 10,000 ; twenty-three above 20,000 ; six above 50,000 ; three above 100,000. The six cities above 50,000 are Hamburg, Munich, Dresden, Leipsic, Frankfurt, and Bremen.

Northern States.—The thirteen Northern States contain forty-six towns above 5,000 inhabitants; seventeen above 10,000; eight above 20,000; three above 50,000; and one (Hamburg) above 100,000.

Hanover, the capital of the kingdom of same name, on the Leine, a well-built but uninteresting city, has a considerable transit trade with Bremen, and various manufactures ; the birthplace of Herschel the celebrated astronomer. *Göttingen*, the seat of a famous university, recently attended by 1400 students, but now by less than half that number. The university library contains 320,000 volumes, besides 5000 MSS. *Hildesheim* has a Lutheran college and a large cattle-market. *Clausthal*, in the mining districts of the Harz, with important mines of silver and lead in the vicinity. *Lüneburg*, a flourishing town, with salt-pits and saline springs in the vicinity. *Emden*, the most commercial town in the kingdom of Hanover, and the only seaport. *Osnabrück*, noted for the manufacture of coarse linens called Osnaburgs. *Oldenburg*, the capital of the grand-duchy of same name, is a small town on the Hunte, the residence of the Grand-duke. *Kniphausen*, capital of the lordship of same name, is a mere village. *Schwerin*, on a lake of same name, which is drained by the Stör, is an old town of 20,000 inhabitants, and the residence of the Grand-duke, who represents the oldest reigning family in Europe. *Rostock* has a university and an extensive trade. *Wismar*, a fortified seaport town, with shipbuilding docks and considerable commerce. *Neu-Strelitz*, capital of Mecklenburg-Strelitz, in the basin of the Havel, is the residence of the court, and contains a collection of curious antiquities. *Brunswick*, the capital of duchy of same name, a large city on the Ocker, with considerable trade, a semi-annual fair, and several literary and scientific establishments; birthplace of Meibom, the historian. *Wolfenbüttel* has an extensive public library, containing relics and MSS. of Luther. *Detmold*, a small town on the Werre, containing the palace of the reigning prince. *Bückeburg*, on the Aue, an affluent of the Weser, the residence of the reigning prince. *Dessau*, a neat little town on the Mulde, near its confluence with the Elbe. *Bernburg*, a small industrious town on the Saale, and the residence of the sovereign. *Frankfurt-on-the-Main*, usually regarded as the capital of Germany, because the Germanic Diet holds here its sittings, is a place of great trade and of extensive banking transactions; birthplace of the poet Goethe. *Bremen*, on the Weser, capital of a district of same name, a large city, second only to Hamburg as a seat of German commerce, with numerous manufactures and various literary establishments. *Hamburg*, a celebrated free city on the Elbe, the largest and most important in Germany, and, in regard to commerce, inferior to none in Europe: in 1850 its exports amounted to £25,000,000, and its imports to £28,000,000. *Lübeck*, on the Trave, one of the four free cities, has great fairs and extensive commerce: here are kept the records of the Hanseatic League, so famous in the middle ages.

Central States.—The thirteen Central States contain sixty-three towns of above 5000 inhabitants; nineteen above 10,000; six above 20,000; two above 50,000; and one (Dresden) above 100,000.

Wiesbaden, the capital of Nassau, is one of the principal watering-places in Germany. *Arolsen*, a small town on the Aar, and the residence of the prince of Waldeck. *Darmstadt*, on the Darm, near its confluence with the Rhine, a handsome town, noted for its magnificent ducal library. *Mayence* (Ger. *Mainz*), nearly opposite to the influx of the Main, strongly fortified by the Confederation, and the principal city in Hesse-Darmstadt, is the birthplace of Guttenberg, the inventor of printing (1440). *Offenbach*, the chief industrial town of the same state, with numerous manufactures. *Worms*, famous for the Diet of 1521, before which Luther appeared. *Giessen*, the seat of a distinguished university, the only one in the grand-duchy. *Homburg*, a small town noted for its mineral springs. *Cassel*, capital of the Electorate of the same name, a considerable town on the Fulda; was the capital of the kingdom of Westphalia, under Jerome Buonaparte; has various manufactures, chiefly of silk, woollen, and cotton stuffs. *Hanau*, a thriving manufacturing town. *Schmalkalden*, where the famous Protestant League of 1531 was formed. *Marburg*, on the Lahn, with a university attended by about 260 students. *Sondershausen,* a small town on the Wipper, containing the residence of the prince, and a collection of antiquities. *Rudolstadt,* on the Saale, has manufactures of woollen cloth and porcelain, a picture-gallery, and a library of 40,000 volumes. *Gotha,* on the Leine, an affluent of the Elbe, a beautiful town, contains a gallery of paintings, a library of 120,000 volumes and 5000 M.SS., a fine cabinet of coins, and museums of arts. *Coburg,* the seat of considerable trade and manufactures. *Meiningen,* a small town, having collections of paintings and natural curiosities. *Weimar,* on the Ilm, capital of the grand-duchy, contains the ducal palace and various literary institutions, a library containing 140,000 volumes and numerous MSS., medals, coins, &c. *Eisenach:* near it is the castle of Wartburg, where Luther was confined in 1522. *Altenburg,* a thriving town with various manufactures. *Greitz,* a small town on the Elster, the residence of the prince. *Gera* has numerous manufactures and well-frequented public baths. *Dresden,* the third largest city in Western Germany, containing 109,000 inhabitants, renowned for its fine edifices, gallery of paintings, magnificent bridge across the Elbe 1424 feet long, and extensive manufactures, especially china and porcelain ware of great beauty. *Meissen,* noted for its immense porcelain manufactory. *Leipsic* (Ger. *Leipzig*), one of the most important commercial towns in Germany, the seat of three great annual fairs, attended by merchants from all parts of Europe and Western Asia—the great emporium of the German book-trade; its university is the most celebrated in Germany. *Plauen* has extensive cotton manufactures. *Freiberg,* in the mining district, has a celebrated mining school, and a museum bequeathed by Werner, containing 100,000 specimens. *Chemnitz,* the most important manufacturing town in Saxony. *Bautzen,* where the French repulsed the Russians and Prussians in 1813.

Southern States.—The four Southern States contain sixty-one towns of above 5000 inhabitants; twenty-four above 10,000; nine above 20,000; and one (Munich) above 100,000.

Munich (Ger. *München*), the capital of Bavaria, on the Isar, an affluent of the Danube, is the largest city in Western Germany except Hamburg; contains numerous splendid public edifices, one of which is the university, which in 1847 had 76 professors and 1471 students, and a library of 200,000 volumes: the royal library contains 800,000 volumes, besides 18,600 MSS. Next to Madrid, Munich is the most elevated city in Europe, being 1690 feet above the level of the sea. *Passau,* a strongly fortified city on the Danube. *Ratisbon* (Ger. *Regensburg*), at the confluence of the Regen and Danube, was long the capital of Bavaria, and afterwards a free imperial city; was the seat of the Imperial Diet from 1662 till 1806: the Roman Catholics formed a league here against the Protestants in 1524: here lie the remains of Kepler, and here Napoleon was wounded in battle in 1809. *Augsburg,* the principal arsenal of the kingdom, the seat of the commerce of Southern Germany, with large cotton factories; but chiefly celebrated for the Confession of Faith which the Protestants presented here to Charles V. in 1530. *Spires* (Ger. *Speyer*): here, in 1529, was made the famous protest to the Emperor Charles V., which originated the religious designation of *Protestants.* *Landau* has one of the strongest fortresses in Germany. *Würzburg,* formerly the capital of Franconia, has a university founded in 1403, attended by upwards of 500 students, and containing a library of 100,000 volumes. *Bamberg,* extensively engaged in raising and preparing liquorice. *Erlangen* has the only Protestant university in Bavaria. *Fürth,* next to

Nürnberg the most important manufacturing town in the kingdom; here the Jews have a Hebrew college and two printing-presses. *Nürnberg,* the most important manufacturing town in the kingdom, famous for its numerous inventions in the mechanical arts—as the watch, gun-carriages, copper-plate engraving, musket, clarion, &c. *Anspach,* a fortified manufacturing city on the Rezat. *Baireuth;* its inhabitants, chiefly Protestants, are actively engaged in trade. *Stuttgart,* the capital of Würtemberg, on the Nesenbach, a small affluent of the Neckar, contains the royal palace, adorned by Flemish paintings and sculptures by Danneker and Canova, and the royal library of 50,000 volumes, including a unique collection of 12,000 Bibles printed in sixty-eight different languages: besides this there is a large public library containing 200,000 volumes and 1800 MSS. *Reutlingen,* a fortified town on the Eschatz, and the first in Swabia that embraced the Reformation. *Ulm,* a fortified town on the Danube, where it begins to be navigable, contains one of the finest cathedrals in Europe: it was taken by Napoleon in 1805, though defended by 30,000 Austrians under General Mack. *Tübingen,* with a distinguished university, which, in 1846, was attended by 863 students: the library contains 70,000 volumes: here Reuchlin and Melancthon were at one time professors. *Carlsruhe* ("Charles' rest"), the capital of Baden, near the Rhine, an elegantly built city, with its thirty-two streets diverging from the palace like the rays of a fan, has numerous literary institutions. *Mannheim,* at the confluence of the Rhine and Neckar, nearly equals the capital in population, and possesses a greater trade. *Heidelberg,* on the Neckar, has a flourishing university with 45 professors, 78 teachers, and a library of 150,000 volumes, with many rare MSS. *Constance,* on Lake Constance, celebrated for the council held here, which condemned the tenets of Wickliffe, and sentenced John Huss and Jerome of Prague to the flames. *Freiburg* has a Roman Catholic university which is well attended, and a magnificent cathedral, whose spire, 380 feet high, is reckoned one of the finest specimens of Gothic architecture in Germany. *Pforzheim,* the birthplace of Reuchlin. *Baden-Baden,* with warm mineral springs. *Vaduz,* on the Rhine, a small town, with a remarkable castle perched on a lofty rock.

8. **Capes.**—None of any importance, with the exception of Ritzebüttel Head in Hanover, between the mouths of the Weser and Elbe.

9. **Islands.**—A small archipelago between the mouths of the Ems and Weser, belonging to Hanover and Oldenburg; the principal islands are Norderney, Bahrun, Langeroge, Spikeroge, and Wangeroge.

10. **Gulfs and Estuaries.**—Ost-See and Gulf of Lübeck, at the mouth of the Trave; the estuaries of the Elbe, Weser, Jahde, and Ems.

11. **Mountains.**—A branch of the Rhætian Alps from Austria forms the southern boundary of Bavaria, Würtemberg, and Baden—separating the Inn from the Isar, and the Rhine from the Danube. In Baden, it receives the name of the *Schwartzwald,* or "Black Forest" (4600 feet high), which, proceeding northwards, separates the Rhine from the Neckar.

From the latter river the *Rauhe,* or Swabian Alps, extend northward through Würtemberg (3300 feet high), separating the Neckar from the Danube.

The *Fichtelgebirge*, in the N.E. of Bavaria (3481 feet), forms a part of the great watershed of Europe, separating the affluents of the Danube from the rivers that find their way northward. The *Thuringerwald*, in the Sachsen States, is a north-western prolongation of the Fichtelgebirge.

The *Böhmerwald*, between Bavaria and Bohemia (4613 feet), separates the Danube from the Moldau, a tributary of the Elbe.

The *Erzgebirge*, a continuation of the Fichtelgebirge, between Saxony and Bohemia, separates the basins of the Elbe and Danube (2500 feet).

The *Odenwald*, in Baden and Hesse-Darmstadt, forms a continuation of the Schwartzwald, and separates the Main from the Neckar (2300 feet).

The *Rhöngebirge*, in the N.W. of Bavaria, separates the Fulda and Werra from the Kinzig and Main.

The *Westerwald*, in Nassau, lies between the Main and Lahn, affluents of the Rhine.

The *Harzgebirge*, in the S. of Hanover and in Brunswick, extends between the Weser and the Elbe (3230 feet).

None of the mountains of Germany reaches the line of perpetual snow, which in the Alps, to the immediate south of it, has an elevation of 8500 feet.

12. **Principal River-Basins.**—Of the thirty capitals of Western Germany, twenty-seven belong to three river-basins—namely, the Rhine, the Weser, and the Elbe; the remaining three capitals belong respectively to the basins of the Trave, Stör, and Danube. The first three of these basins incline to the North Sea, the next two to the Baltic, and the last to the Black Sea. Some authorities place Schwerin in the basin of the Elbe.

BASIN.	Length in Miles.	Area in Geographical Sq. Miles.	CAPITALS OF STATES.
Rhine, ...	600	65,280	Wiesbaden, Carlsruhe, Vaduz, Frankfurt, Homburg, Darmstadt, Stuttgart.
Weser, ...	250	13,120	Bremen, Meiningen, Oldenburg, Hanover, Brunswick, Bückeburg, Detmold, Arolsen, Cassel.
Elbe, ...	550	41,860	Hamburg, Dessau, Dresden, Neu-Strelitz, Bernburg, Rudolstadt, Greitz, Altenburg, Sondershausen, Gotha, Weimar.
Trave, ...	60	...	Lübeck.
Stör, ...	40	...	Schwerin.
Danube, ...	1725	...	Munich.

For the Table of Rivers and Towns, see under "Austria," where will be found the complete river system of Central Europe.

13. **Lakes.**—Boden See or Lake of Constance, between Germany and Switzerland, drained by the *Rhine;* Plau, Malchow, Flesen, Kölpin, and Müritz, in Mecklenburg, drained by the Elde, an affluent of the *Elbe;* Dümer, or Diepholz, in Hanover, drained by the Hunte, a tributary of the *Weser;* and Ammer See, Wurm See, and Chiem See, in Bavaria, drained by affluents of the Isar and Inn, tributaries of the *Danube.*

14. **Climate.**—In summer, mild, humid, and variable in the northern plain, which is exposed to the winds that blow from the northern seas; but the cold of the long winters is so severe that the rivers and lakes are for months covered with ice strong enough to bear loaded waggons, and the ground is for three or four months covered with deep snow. The centre and south are much drier, the sky being usually serene, and the temperature less subject to sudden variations. The greater elevation of the south compensates for the difference of latitude, so that in all parts of Germany the mean annual temperature is nearly the same.

	Annual Temperature.	Summer Temperature.	Winter Temperature.
Hamburg,	48°	63°	32°.7
Hanover,	48°.6	64°	32°
Dresden,	49°.1	66°	32°.7
Munich,	48°.4	63°.6	32°.5
Stuttgart,	49°.4	64°.9	32°.2
Carlsruhe,	51°.5	66°.3	34°.6

Average annual rain in the north, 22½ inches; at Ulm, in the south, 28 inches.

15. **Geology.**—Tertiary strata cover all the northern plain, and the whole region south of the Danube; secondary strata the entire centre from Hanover to the Danube, and from the Rhine to the Naab. Only small detached patches belong to the Palæozoic series, as in Waldeck, Brunswick, and the Thuringian Forest. Granitic rocks in the Böhmerwald, east of the Naab.

16. **Minerals.**—These are very abundant in many places, especially in the Harz, Erzgebirge ("Ore Mountains"), and other mountain-ranges. Coal is found in Hanover and Saxony, but, as charcoal is easily obtained, it is not generally worked; salt, coal, and iron in Bavaria; copper, manganese, cobalt, and mercury in Rhenish Bavaria; iron, coal, silver, copper, cobalt, and lead in Würtemberg; salt, alum, vitriol, sulphur, coal, iron, copper, lead, and silver in Baden. In the Harz Mountains are mines of iron, copper, lead, litharge, salt, coal, alum, sulphur; and in the Erzgebirge metals of almost every kind in great abundance, besides numerous precious

stones, as garnet, topaz, tourmaline, amethyst, beryl, jasper, chalcedony. The principal mineral springs are those of Wiesbaden, Ems, and Nieder-Selters in Nassau; Pyrmont in Waldeck; Kissingen, Brückenau, and Rosenheim in Bavaria; Wildbad in Würtemberg; and Baden-Baden in the Grand-Duchy of Baden.

17. **Botany.**—The indigenous plants of Germany (using here the term in its widest acceptation) amounts to about 7000 species, of which 2566 are flowering. These are divided into 529 monocotyledons and 2037 dicotyledons, making together 115 families. The whole country is embraced in Professor Schouw's second phytogeographic region (see under "Europe," par. 19). The flowering plants of Prussia are reckoned at 1079 species. Forests are numerous, as the terms Schwartzwald, Böhmerwald, &c. indicate; and the most frequent forest-trees are the elm and poplar in the N., oak and birch in the W., and pine in the E. The vine, chestnut, and almond thrive well in the valley of the Rhine; and the apple, pear, walnut, and apricot everywhere. All kinds of corn are raised, not even excepting maize; and tobacco, hops, beetroot, flax, and hemp are cultivated in many places.

18. **Zoology.**—The forests abound with wild animals, which afford sport to the princes and nobles: the wolf and hamster in the Harz; the lynx, fox, marten, and weasel generally, and the hog and deer in many places. The number of mammals in the whole of Germany is estimated at 78—viz. 46 carnivora, 22 rodents, 1 pachyderm, and 9 ruminating animals. The birds amount to 305 species, and the reptiles to 31. Fishes are also numerous, though the precise number of species cannot yet be stated; but as 94 species have been ascertained as belonging to Belgium (of which 53 are fresh-water), and as 32 species are found in the single province of Carniola, we cannot be far wrong if we estimate them at 150 or 200 species. Of the fresh-water species the most common are the carp, pike, perch, eel, and trout; and of marine species, the salmon, sturgeon, turbot, and flounder. Seals also abound in the Baltic. The fishes, molluscs, radiata, and most of the articulata, belong to the Celtic province of marine life, which includes the German Ocean and the Baltic (see p. 111).

19. **Ethnography.**—The people of Germany belong almost exclusively to the Teutonic stock, but there is a mixture of Sclavonic blood in Mecklenburg, Saxony, and the portion of Bavaria south of the Danube; while Celtic blood has mingled with the Teutonic in Würtemberg, Baden, and parts of Bavaria.

Language.—The German language, in one or other of its dialects, is the only tongue spoken in Western Germany. It branches off into two grand divisions—the *Hoch Deutsch* or High German, distinguished by its rough and guttural sounds; and the *Nieder Deutsch*, or Low German, characterised by a softer enunciation. The former prevails in Southern and Central Germany—viz. Baden, Würtemberg, Bavaria, Nassau, the Saxon and Hessen States; and the latter in Hanover, Oldenburg, and Mecklenburg. High German alone has been cultivated since the time of Luther, whose mother tongue it was, and who made it the vehicle of spreading the principles of the Reformation. In all parts of Germany it is the medium of intercourse between the educated classes; it is also the language of religion, legislation, and literature.

Religion.—Three widely different religions are found in Western Germany—Protestantism, Roman Catholicism, and Judaism. The Protestants amount to 10½ millions; the Romanists to 5¼ millions; and the Jews to 168,000. There are also a few adherents of the Greek Church in Saxony. The Romanists greatly outnumber the Protestants in Bavaria, Liechtenstein, and Baden; but in all the other States they are decidedly in the minority. The Protestants are divided into Lutherans and Calvinists or Reformed, the former of which are greatly the most numerous.

Education is in a highly flourishing condition, especially in Saxony and the Central States, where one-sixth of the population are constantly at school. General education is of a higher order than in any other part of Europe, there being numerous gymnasia, lyceums, academies, universities, learned societies, and richly-furnished libraries. There are twelve universities—viz., Munich, Würzburg, and Erlangen in Bavaria; Tübingen in Würtemberg; Heidelberg and Freiburg in Baden; Leipsic in Saxony; Göttingen in Hanover; Rostock in Mecklenburg-Schwerin; Jena in Saxe-Weimar; Giessen in Hesse-Darmstadt; and Marburg in Hesse-Cassel.

20. **Literature.**—With the exception, perhaps, of the British Isles, no other portion of Europe, of equal size, can boast of such a galaxy of illustrious names in every department of literature, science, and art. In the following list we do not distinguish the natives of Western Germany from those of the Germanic portions of Prussia and Austria:—

POETRY.—Ofterdingen (the probable collector of the poems forming the "Niebelungen Lied," the Iliad of the Germans), Hutten, Opitz, Gellert, Klopstock, Burger, Goethe, Schiller, Uhland, Körner, Voss.

HISTORY.—Pfeffel, Hüllmann, Bahr, Rotteck, Gœrres, Becker, Schlözer, Leo, Heeren, Wachler, Gervinus, Raumer, Wachsmuth, Klemm, Gülich, Menzel, Ranke.

PHYSICAL SCIENCE.—Albertus Magnus, Copernicus, Kepler, Cluverius, Blumenbach, Olbers, Encke, W. Herschel, Tennemann, Ritter, Berghaus, Leopold von Buch, Alexander von Humboldt, Liebig, Rammelsberg, Bischoff, Naumann, Mohs, G. Rose, Haidinger, Meckel, Mitscherlich.

MENTAL PHILOSOPHY and JURISPRUDENCE.—Leibnitz, C. Wolf, Brucker, Kant, Jacobi, Fichte, Schelling, Hegel, Puffendorf.

SACRED LITERATURE.—Ulphilas (translator of the Gothic version of the Gospels), Tauler, Luther, Melancthon, Spalatin, Böhme, Arndt, Spener, Franke, Sturm, Zinzendorf, Mosheim, Bengel, Michælis, Semler, Rosenmüller, Eichhorn, Griesbach, Knapp, Hug, De Wette, Schrœch, Schleiermacher, Guericke, Hase, Neander, Gieseler, Plank, Hengstenberg, Tholuck, Tischendorf, Stier, H. Olshausen, Ullmann, Krummacher.

PHILOLOGY.—Reuchlin, Buxtorf, Stockius, Ludolf, Fabricius, F. A. Wolf, Adelung, Schleusner, Schneider, Vossius, Freytag, Wahl, Gesenius, Bopp, Grimm, Reiske, Ernesti, Heyne, Buttmann, Matthiæ, Zumpt, Freund, Ewald, Passow, Rödiger, Fürst, Kosegarten.

FINE ARTS.—In Music some of the more celebrated names are—Handel, Bach, Haydn, Beethoven, Weber, Mozart, Klein, Mendelssohn; in Painting—Albert Durer, Elzheimer, Sandrart, Van-der-Faes, Roos, Warner, G. Netscher, Mignon, Kneller, Anna Waser, Denner; and in Sculpture—Dannecker.

MISCELLANEOUS.—Werner, Kotzebue, Jung Stilling, Zimmermann, Herder, Lessing, Bouterwek, Tieck, Jean Paul Richter, Wagner, A. W. Schlegel, Bunsen.

21. **Government.**—From the ninth century till 1806, or for a period of 1000 years, Germany (in its wider signification) formed an Empire, governed by a sovereign elected by the different states, whose capital was Vienna. Its first and greatest sovereign, the celebrated Charlemagne, son of Pepin le Bref, King of the Franks, and grandson of Charles Martel, was crowned Emperor of the West in A.D. 800. His dominions extended from the Ebro to the mouth of the Elbe, from the Atlantic to the Mountains of Bohemia and the Raab, and from the British Channel to the Volturno. The last German Emperor was Francis II. of Germany, who renounced that title in 1806, and became Francis I. of Austria. The Empire was succeeded by the "Confederation of the Rhine," established at Paris in 1806, under the protection of Napoleon I., and consisting of the kings of Bavaria and Würtemberg, and several petty sovereigns. In 1815 the Congress of Vienna established the "Germanic Confederation," being an alliance of the thirty-four independent states now forming Germany, for the purpose of mutual protection and defence. Each state has full control over its own internal affairs, but cannot declare war, or establish peace with any other country, without the consent of the Confederation; and each state, according to its population, is required to furnish its contingent to the general army. The Confederation conducts its business by a diet or parliament, which sits permanently at Frankfurt-on-the-Main, and which is presided over by the Emperor of Austria. It acts either as a General Assembly, in which every state has one or more votes, according to rank—the whole number being seventy; or as a minor assembly or committee, in which the whole number of votes is seventeen; no state having more than one vote, and several

small states uniting to form one. Besides the Federal Government, each state exercises a sovereign and independent power over its own territory, and has its own capital city. The character of the different governments varies considerably, but most of them are constitutional monarchies, in which the power is divided between the sovereign and a legislative chamber.

Army.—In 1853 the federal army numbered 351,179 men, besides a reserve force of 100,340; of which Austria furnishes 110,000, Prussia 93,600, Bavaria 41,500, Saxony 14,000, Hanover 15,200, Würtemberg 16,280, Baden 11,600, &c., in proportion to their respective populations. In 1856 the entire federal force, including the reserve troops, was 562,735 men, with 1356 guns. Each state, however insignificant, has its own national exchequer, public debt, revenue, expenditure, &c.

The *National Debt* of the fourteen largest states of Western Germany in 1854 amounted to £45,886,429; their annual *Revenue* to £10,000,000, and their *Expenditure* to £11,000,000.

22. **Commerce.**—Though the seaboard is very limited, commerce is greatly facilitated by an extensive network of railways, and by numerous navigable rivers, all of which are traversed by steam-packets. Until the establishment of the Zollverein, however, or Customs' League, in 1818, trade was greatly trammelled by each petty state exacting dues from every vessel that touched its frontier. Now, however, only one charge is levied, and the proceeds are divided among all the states forming the league, in the ratio of their respective populations. Twenty-four states, including Prussia, have entered the Zollverein; but Hamburg, Bremen, Lübeck, Mecklenburg-Strelitz, Lippe-Schaumburg, and Liechtenstein have kept aloof, together with Austria and Holstein. The Zollverein represents an area of 176,000 square miles, and a population of 28,000,000. The *Exports* of the Zollverein in 1852 amounted to £27,763,000; of Hamburg to £30,747,000; and of Bremen to £7,336,000. The chief exports consist of corn, cattle, cheese, tallow, distilled liquors, metals, salt, wool, timber, glass, porcelain, and toys. The *Imports* of the Zollverein amounted in 1852 to £29,472,000; of Hamburg to £32,365,000; and of Bremen to £7,954,000. The principal articles are tea, sugar, coffee, and other tropical products; brandy, cotton, and silk fabrics, hemp, tallow, leather. The exports and imports of the Zollverein are of course included to a very large extent in those of Hamburg and Bremen, as these cities stand on the main outlets from Western Germany.

23. The **Manufactures** of Germany are not of very high importance, as steam-power is rarely employed: linens in Hanover and the Hessen States; cottons, woollens, and porcelain in Saxony; iron, steel, and other metals in the Harz, Nassau and Saxony; linen-weaving, tanning, paper-making, hardware, beetroot sugar, tobacco, porcelain, mathematical and optical instruments, toys, and wooden clocks in Bavaria; wine in Rhenish Bavaria; beer, leather, paper, wooden and straw ware in numerous places.

24. The **Inland Communication** is in a highly efficient state, both by land and water. In 1858 the total number of miles open for traffic in all Germany and Denmark was 9920. If from this number we deduct 2086 miles for Austria, and 2514 for Prussia, we shall have 4600 miles pertaining to the thirty minor states. The principal lines were the following:—

Hamburg to Hanover and Hildesheim; Hanover to Bremen; Hanover to Cologne; Hanover to Brunswick, Magdeburg, and Berlin; Magdeburg to Halle, Leipsic, and Dresden; Halle to Weimar, Gotha, and Cassel; Cassel to Frankfurt-on-the-Main; Leipsic to Bamberg, Nürnberg, and Munich; and the Würtemberg Railway from Heilbronn to Stuttgart, Ulm, and Lake of Constance.

PRUSSIA.

1. **Boundaries.**—The kingdom of Prussia consists of several detached sections, which are separated from each other by the smaller states of the Germanic Confederation. The principal portion is bounded as follows: N., the Baltic; W., the minor states of Germany; S., Germany and Austria; E., Poland and Russia. The western portion has on the N. Hanover and Holland; W., Belgium; S., France; E., the minor states of Germany. Lat. 49° 7′—55° 52′ N., and lon. 5° 50′—22° 50′ E. Berlin, near the centre, is nearly on the same parallel with Cambridge, Amsterdam, Hanover, and Warsaw; and on nearly the same meridian with Copenhagen, Neu-Strelitz, Trieste, Naples, Malta, and Tripoli.

2. **Form and Dimensions.**—Form extremely irregular, and consisting of a number of isolated territories; but the eastern, and by far the largest portion, approaches in form to an equilateral triangle, each of whose sides is about 500 miles long. Extreme length of the kingdom from E. to W., 715 miles; breadth, 350 miles.

3. The **Coast-line** is of limited extent, and wholly confined to the Baltic, except a small tract recently purchased from Oldenburg, and situated on the Jahde, an arm of the North Sea. The total length does not exceed 700 miles, or one mile of seaboard to every 154 square miles.

4. **Area,** including Hohenzollern recently acquired, 108,410 square miles, which is considerably less than that of the British Isles, and which allows 4$\frac{1}{4}$ acres to each inhabitant.

5. **Population,** in 1855, and including Hohenzollern, 17,202,831; being 156 persons for each square mile. This population is a little more than that of England without Wales. The most populous provinces are Rhenish Prussia and Silesia, and the least populous are Prussia proper and Posen, or the extra-Germanic provinces.

6. **Political Divisions.**—Prussia is politically divided into eight provinces (besides the territory of Hohenzollern), which are subdivided into 25 governments and 328 circles. Two of these provinces—Prussia proper and Posen—are beyond the limits of Germany. In the following table the capitals of provinces are placed first, and the chief town in each government is printed in *italics* :—

Prussia Proper[*] (including East and West Prussia).—KÖNIGSBERG 78, Insterburg 10 (Pregel), Memel 10, Tilsit 14 (Niemen), Elbing 22 (Elbing), *Danzig* 63, Graudenz 10, Thorn 10 (Vistula).

Towns between 5000 and 10,000 Inhabitants.—Pillau, *Gumbinnen*, Braunsberg, Marienburg, *Marienwerder*, Kulm, Friedland, Eylau.

Posen, or Prussian Poland.[†]—POSEN 40 (Wartha), Lissa 10 (Obra), Rawitsch 10 (Bartsch), *Bromberg* 10 (Brahe).

Inowrazlaw, Meseritz, Gnesen, Kempen, Fraustadt, Krotoschin or Kratoszyn.

Silesia.—BRESLAU 121, Glogau 15, Brieg 12 (Oder), Görlitz 19 (Lower Neisse), Grünberg 11 (Lunze), *Liegnitz* 15 (Katzbach), Schweidnitz 14 (Weistritz), Neisse 17 (Upper Neisse).

Ohlau, *Oppeln*, Ratibor, Sagan, *Sprottau*, Bunzlau, Hirschberg, Lauban or Luben, Jauer, Goldberg, Striegau, Reichenbach, Oels, Strehlen, Münsterberg, Frankenstein, Glatz, Neustadt, Leobschütz, Gleiwitz.

Pomerania.—STETTIN 50 (Oder), Stargard 12 (Ihna), Stolpe 11 (Stolpe), Greifswalde 13, *Stralsund* 19 (Strait of Gellen).

Anclam, Demmin, *Gollnow*, Rugenwalde, *Köslin*, Treptow, Greiffenberg, Swinemünde.

Brandenburg.—BERLIN 426 (Spree), Brandenburg 16, *Potsdam* 32 (Havel), Ruppin 10 (Rhin), *Frankfürt* 30 (Oder), Prenzlow 13 (Ucker), Landsberg 12 (Wartha), Guben 11 (Neisse).

Charlottenburg, Kotbus, Spremberg, Rathenow, Spandau, Luckenwalde, Jüterbogk, Perleberg, Wittstock, Schwedt, Wrietzen, *Küstrin*, Crossen, Königsberg.

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[*] The pronunciation of German words will be found under "Germany," par. 6.

[†] Rules for pronouncing Polish proper names :—

THE VOWELS are in general pronounced as in German; but *é* and *ó*, when accented, are like *a* in fate and *oo* in good ; *w* is equal to *v* in English.

THE CONSONANTS *b*, *d*, *f*, *h*, *k*, *l*, *m*, *n*, and *p* have the same sounds as in English.

c=*ts*, as Kielce, Bistrica (*Keel'tse*, *Bis-tree'tsa*).
ch=*ch* in the Scotch and German, as Bochnia, Chorostkow.
cz=*tsh* or *ch* in Church, as Czernowitz, Drohobicz (*Tsher'no-vitz*, *Dro'ho-bitsh*).
g is always hard, as in the German.
j=*j* in German, or *y* in English, as Jaslo, Jaworow (*Yas'lo*, *Ya-vo'rov*).
rz=*zh*, or French *j*, as Brzezany, Przmysl (*Bzha-za'ny*, *Pzhem'isl*).
sz=*sh* in shall, as Kratoszyn, Zamosz (*Kra-to'shin*, *Zâ'mosh*).

The Polish is spoken in Prussian, Austrian, and Russian Poland, in the more elevated portions of Prussia proper, and generally in the basins of the Niemen and Vistula. The sounds of the letters in Sclavonian, Bohemian, and Illyrian correspond in general with those of the Polish. The accent in Polish words of more than one syllable is uniformly on the penultimate, and it is the only Sclavonic tongue that contains nasal sounds like the French *en*, *in*, *on*, which are represented by the letters *a* and *e*, undermarked with an accent.

Prussian Saxony.—MAGDEBURG 66, Wittenberg 9, Torgau 9 (Elbe), Burg 15 (Ihle), Halle 35, *Merseburg* 11, Naumburg 14 (Saale), Quedlinburg 14 (Bode) Halberstadt 20 (Holzemme), Aschersleben 12 (Eine), Eisleben 10 (Böse), Zeitz 11 (White Elster), Langensaltza 9, Mühlhausen 14 (Unstruth), Nordhausen 11 (Zorge), *Erfurt* 32 (Gera).

Schönebek, Barby, Stendal, Gardelegen, North Haldensleben, Kalbe, Weissenfels, Sangerhausen, Eilenburg, Heiligenstadt, Suhl.

Westphalia.—MÜNSTER 25 (Ahe), MINDEN 10 (Weser), Herford 10, Bielefeld 10 (Werre), Paderborn 11 (Lippe), Sœst 10 (Sösterbach), Dortmund 11 (Emster), Iserlohn 12 (Baarenbach).

Hamm, Lippstadt, *Arnsberg.*

Rhenish Prussia.—COLOGNE 105, Wessel 12, Crefeld 45 n., *Düsseldorf* 26, Bonn 14, *Coblentz* 23 (Rhine), Mülheim 11 (Ruhr), Remscheid 12 n., Elberfeld 39, Barmen 41 (Wipper), *Treves* or Trier 20 (Moselle), *Aachen* or Aix-la-Chapelle 53 (Würm), Eupen 13 (Vesdre).

Emmerich, Cleves, Duisburg, Neuss, Mühlheim, Neuwied, Solingen, Rensdorf, Lennop, Mayen, Saar-Louis, Saarbrück, Duren, *Kreuznach*, Essen.

Hohenzollern.—HECHINGEN 3 (Starzel), Sigmaringen 2 (Danube).

7. **Descriptive Notes.**—In the eight provinces there are one hundred and fifty-two towns of more than 5000 inhabitants; sixty-nine above 10,000; twenty-one above 20,000; eight above 50,000; and three above 100,000. Those above 50,000 are Berlin, Breslau, Cologne, Königsberg, Magdeburg, Danzig, Stettin, Aix-la-Chapelle—the three first of which contain upwards of 100,000.

THE TWO EXTRA-GERMANIC provinces contain twenty-four towns of above 5000 inhabitants; twelve above 10,000; four above 20,000; and two (Königsberg and Danzig) above 50,000.

Königsberg, formerly the capital of East Prussia, and now of Prussia proper, a populous and strongly fortified city on the Pregel, near its mouth in the Frische Haff; it is the fourth city in Prussia in point of population; has shipbuilding docks, great trade in grain, numerous manufactures, chiefly woollens, cottons, linens, and silks, and a famous university, attended (in 1844) by 340 students: amongst its more illustrious professors may be mentioned Immanuel Kant, the famous metaphysician, Olshausen, Von Bohlen, Gebser, Dinter, Lobeck, Graff. *Memel*, the most northern town in the kingdom, at the entrance of the Curische Haff, strongly fortified, and with extensive trade in timber and corn. *Tilsit*, on the Niemen, memorable for the treaty between France, Russia, and Prussia in 1807, which deprived Prussia of all her possessions between the Rhine and the Elbe, and the greater part of Prussian Poland; nearly all of which were restored by the Congress of Vienna in 1815. *Elbing*, a fortified flourishing town, with considerable trade and manufactures. *Danzig*, a large fortified city near the mouth of the Vistula, one of the greatest corn-shipping ports in the world; great foreign commerce; the birthplace of Fahrenheit the inventor of the thermometer. *Thorn*, a strongly fortified town on the Vistula; the birthplace of Copernicus the eminent astronomer, in 1473. *Friedland* and *Eslau:*

here the French defeated the allied Russians and Prussians in 1807. *Posen*, a large fortified city on the Wartha, an affluent of the Oder, was at one time the capital of Poland; it is largely engaged in the export of agricultural produce. *Rawitsch* and *Bromberg* possess several manufactures, and an active transit trade: the Canal of Bromberg connects the Vistula with the Netze, an affluent of the Oder.

THE FOUR CENTRAL PROVINCES contain ninety towns of above 5000 inhabitants; thirty-seven above 10,000; nine above 20,000; four above 50,000; and two (Berlin and Breslau) above 100,000.

Breslau, the second city in Prussia in point of population; the great emporium for the linens of Silesia; a great wool-market; numerous manufactures; trade in mining produce, Hungarian wines, and other merchandise; the birthplace of Wolff, the mathematician and philosopher; has a university adorned by the names of Von Cölln, David Schulz, Bernstein, Middeldorpf, Wachler the historian, and Passow the Greek lexicographer. *Glogau*, a strongly fortified town on the Oder, with several manufactures, especially of sugar from beetroot. *Görlitz* has a Protestant college, and extensive manufactures of linen and woollen cloths. *Liegnitz:* here the Prussians, under Frederick the Great, totally defeated the Austrians in 1740; here also, under Blucher, they routed the French in 1813. *Schweidnitz*, a fortified town, with woollen manufactures and a Protestant college. *Neisse*, a fortified town on a river of same name, has various printing establishments, and manufactures of linen and woollen cloths. *Stettin*, a populous and fortified city at the mouth of the Oder, and, next to Danzig, the chief seaport of the kingdom; shipbuilding, great wool-market in June, and numerous manufactures, the chief of which is woollen. *Greifswalde*, a fortified town on the Ryck, with a university, which, in 1844, numbered 225 students; Kosegarten the Orientalist, Pelt, and Böhmer, are among its most celebrated professors. *Stralsund*, on the Baltic, a strongly fortified seaport, having considerable trade. BERLIN, the capital of the province Brandenburg and of the kingdom, is an elegant city, situated on the Spree, an affluent of the Havel, and containing nearly half a million inhabitants; famous for the variety and extent of its manufactures, among which the most remarkable are its beautiful cast-iron articles called "Berlin jewellery," its paper, porcelain, and dye-works. There are numerous educational establishments, including the university, the most celebrated in Germany, though only founded in 1810: it is usually attended by about 1800 students; and among its former and present professors are many of the most illustrious names in modern literature—as Neander, the celebrated church historian; Schleiermacher, Hengstenberg, Strauss, the neologist; De Wette; Marheinecke; von Savigny, the jurist; Hegel, the metaphysician; Encke, the astronomer; von Raumer, the historian; Karl Ritter, the prince of geographers; Bekker, the indefatigable editor of Greek and Roman classics; Böckh, the Greek philologist; Zumpt, the Latin grammarian; and Bopp, the renowned Orientalist, and author of the "Comparative Grammar of the Indo-European Languages:" the royal library contains 600,000 printed volumes. Berlin is indeed the great centre of intellectual development in the north of Germany. *Brandenburg*, with a college, public library, and considerable commerce. *Potsdam*, an important city on the Havel, the second royal residence in the kingdom, a principal station for the army, and the birthplace of Alexander von Humboldt, the illustrious author of the "Kosmos." *Frankfürt*, on the Oder, has extensive commerce in German and foreign produce, and is the seat of three great annual fairs, attended by merchants from all parts of Europe. *Magdeburg*, on the Elbe, an ancient and populous city, and the strongest fortress in the kingdom, has great trade, which is facilitated by numerous steamers on the river. *Wittenberg:* here the Reformation commenced in 1517, and here are buried its great promoters, Luther and Melancthon. *Burg* has manufactures of woollens, glue, and snuff, also dye-works. *Halle*, a considerable town on the Saale, with a celebrated university adorned by the names of Gesenius, Tholuck, Ullman, Rödiger, Spener, Thomasius, Breithaupt, the brothers Michaelis, Cellarius, Baumgarten, Semler, Knapp, Wegscheider, and Meckel, the great comparative anatomist. Halle is also the birthplace of Handel the musician. *Merseburg* and *Naumburg*, both on the Saale, are thriving industrious towns. *Quedlinburg*, the birthplace of Klopstock and of Karl Ritter. *Halberstadt* contains a superb cathedral and a Jewish synagogue; numerous manufactures and extensive trade. *Eisleben*, birthplace of the immortal Luther, 10th November 1483. *Zeitz*, rich copper-mines in the vicinity. *Mühlhausen*, a fortified town on the Unstruth, with manufactures of carpets, coarse linens, and woollens. *Nordhausen*, a fortified town on the Zorge, has various manufactures. *Erfurt*, a fortified and important city on the Gera, with woollen and linen manufactures, and several literary and scientific institutions. Its university, where Luther was educated, was at one time the most celebrated in all Germany.

THE TWO RHENISH PROVINCES contain thirty-nine towns of above 5000 inhabitants; twenty-one above 10,000; nine above 20,000; two above 50,000; and one (Cologne) above 100,000.

Münster, on the Aa, an affluent of the Ems, contains a Catholic theological seminary: here was concluded the peace of Westphalia in 1648, at which the Netherlands were declared independent; and here John of Leyden, and his two accomplices, were suspended in iron cages in 1535. *Minden:* here Frederick of Brunswick defeated the French in 1759. *Bielefeld*, the centre of the linen trade of the province. *Paderborn* has iron mines in the vicinity. *Sœst*, formerly one of the Hanseatic towns. *Dortmund*, the seat of a mining board. *Iserlohn*, noted for its hardware goods. *Cologne*, with 105,000 inhabitants, is the third city in Prussia in point of population, and by far the most important in the western division of the kingdom: its position on the Rhine gives it great commercial facilities; famous for its distilled waters, called "Eau-de-Cologne," and for its magnificent Gothic cathedral, one of the finest in Europe: here the monk Barthold Schwarz invented gunpowder in 1330; and here was born Rubens, the most famous painter of the Flemish school, in 1577. *Crefeld*, the principal town in Prussia for the manufacture of silk goods. *Düsseldorf*, the residence of the governor of the Rhenish provinces, has a bridge of boats across the Rhine. *Bonn* has a celebrated university adorned by the names of Niebuhr, A. W. von Schlegel, Welcker, Freytag, Augusti, Nitsch, Bleek, and Gieseler: in 1844 there were 714 students, and the library contained 100,000 volumes. The scenery along the Rhine is here extremely beautiful. Birthplace of Beethoven the composer. *Coblentz*, at the confluence of the Rhine and the Moselle, the former of which is crossed here by a bridge of boats 485 yards long, has manufactures of cotton and woollen fabrics, and an active general trade. *Elberfeld* and *Barmen*, great seats of the cotton, silk, and thread manufacture, and famous for dyeing Turkey red. *Treves* (Ger. *Trier*), an ancient city on the Moselle, at one time the residence of Constantine the Great, contains numerous Roman remains, and maintains a brisk trade in corn, timber, and Moselle wines. *Aix-la-Chapelle* (Ger. *Aachen*), at one time the residence of Charlemagne, who died here: celebrated for its mineral baths, its treaties of 1668 and 1748, and the congress of 1818. *Hechingen*, a small town on the Starzel, contains a palace where the prince resides: the principality was ceded to Prussia in 1850.

8. **Capes.**—Cape Dars, in the N.W. of Pomerania; Reserhoft and Bruster Head, N. of Prussia Proper.

9. **Islands.**—Rugen, N.W. of Pomerania; Usedom and Wollin, at the mouth of the Oder, enclosing the Stettiner Haff.

10. **Gulfs, Bays, and Straits.**—Strait of Gellen and West Deep, between Rugen and Pomerania; Stettiner Haff and Swinemünde Bay, N. of Pomerania; Frische Haff and Gulf of Danzig, at the mouth of the Vistula; Curische Haff, at the mouth of the Niemen.

11. **Mountains.**—Prussia is, generally speaking, an extremely level country—being situated in the great northern plain; the *Harzgebirge* (3230 feet) and *Thuringerwald* are in the W. and S.W. of Saxony; the *Riesengebirge*, between Silesia and Bohemia, highest summit Schneekoppe, 5275 feet.—(See "Germany," par. 11.)

12. **The Principal River-Basins,** with the capitals situated in them, are the following:—

BASIN.	Length in English Miles.	Area in Square Miles.	CAPITALS.
Niemen, ...	400	32,180	*No capital.*
Pregel, ...	120	5,920	Königsberg.
Vistula, ...	530	56,640	*No capital.*
Oder, ...	445	39,040	Stettin, Breslau, Posen.
Elbe, ...	400	41,360	Magdeburg, BERLIN.
Weser, ...	250	13,120	*No capital.*
Ems, ...	160	5,000	Münster.
Rhine, ...	600	65,280	Cologne, *Hechingen.*

For the Table of Rivers and Towns, see under "Austria," par. 13.

13. **Lakes** very numerous, said to exceed 1000, but all very small: the principal are Spirding See and Mauer See in Prussia Proper, drained respectively by the Augerup, an affluent of the *Pregel*, and by the Pissek, an affluent of the Narew, one of the principal tributaries of the *Vistula.*

14. **Climate** generally temperate and salubrious; humid and cold in the northern provinces; very warm in summer and very cold in winter, with little rain in Posen and Silesia; but in Rhenish Prussia the vine is successfully cultivated. Mean annual temperature at Berlin, near the centre of the kingdom, 48° 2′, of summer 64° 5′, and of winter 31° 4′; number of rainy days at Berlin 160; annual

fall of rain 20 inches, and decreasing towards the east; prevailing winds W. and S.W.

15. **Geology.**—The eastern or main division, situated in the great European plain, consists almost exclusively of Tertiary strata; but several small tracts of Secondary, Upper Palæozoic, and crystalline strata, occur in the S. and S.W., along the frontiers of Austria and Western Germany. The Western or Rhenish provinces are covered for the most part with Upper Palæozoic beds, with a little Tertiary in the N.

16. **Minerals.**—These differ greatly in the different provinces. The most characteristic mineral of Prussia Proper is amber, a fossil resin which occurs in beds of lignite on the Baltic coast from Memel to Danzig, whence it is exported to Turkey and other places, and converted into mouth-pieces of tobacco-pipes, &c.; bog-iron and nitre in Posen; valuable mines of coal, iron, lead, zinc, copper, silver, and arsenic in Silesia; potter's clay, pipe-clay, and Kaolin or porcelain clay, in Pomerania; iron, gypsum, alum, vitriol, saline springs, in Brandenburg; coal, iron, lead, copper, rock-salt, and mineral springs, in Saxony, Westphalia, and Rhenish Prussia. A discovery of the utmost importance for the commerce of Prussia was made at Stassfurt, near Stettin, in 1858, consisting of inexhaustible beds of pure rock-salt, the quality of which is considered superior even to that of Liverpool; and from its proximity to the sea, it can be shipped at a very low price.

17. **Botany and Agriculture.**—For the indigenous botany of Prussia, which is wholly included in Schouw's second botanic region, see under "Germany," par. 17. *Agriculture* is well conducted, more especially in the German provinces, and gives employment to about three-fourths of the inhabitants. The soil is fertile, especially in the vicinity of the large rivers, and considerably more corn is raised than is required for home consumption: the principal crops are rye, oats, barley, wheat, pease, beans, buckwheat, potatoes, flax, hemp, hops, and tobacco. Forest trees cover large tracts, but fruit trees are not extensively cultivated, with the exception of the vine in the Rhenish provinces. The pasturage is generally excellent; sheep, cattle, and horses are extensively reared, and wool forms an important article of exportation.

18. **Zoology.**—For the fauna of Prussia, see under "Germany," par. 18.

19. **Ethnography.**—The inhabitants belong to two distinct races—Germans and Sclavonians.

Language.—Germans form the majority of the population in the six German provinces, and speak either High or Low German. The Sclavonians are chiefly located in Prussia Proper, Posen, and a part of Upper Silesia, and employ various languages belonging to the great Sclavonic family of tongues; as the Polish in Posen, and the more elevated portions of Prussia Proper (the lower grounds being occupied by Germans); Slowakish in Upper Silesia; and the Wendish in the centre of Pomerania, along the Upper Spree. The Old Prussian, spoken by the *Prusczi*, in Prussia Proper, was also a Sclavonic tongue, allied to the Lettish and Lithuanian, but it is now extinct.

Religion.—In 1855 the Protestants, who are chiefly Calvinists, numbered 10,534,754; the Romanists, 6,418,310; the Greek Church, 1380; the Mennonites or Anabaptists, 14,139; and the Jews, who reside chiefly in Posen, 234,248.

Education.—The education of the people is better and more successfully conducted in Prussia than in any other European state, except Saxony. Attendance at school is compulsory between the ages of five and fifteen, and nearly one-sixth of the entire population is constantly receiving instruction. Besides the 24,200 elementary schools, attended by 2,454,000 pupils, there are numerous city schools and gymnasia, where the higher branches of instruction are taught, preparatory to admission into the universities. The proficiency of the pupils when quitting the gymnasium is generally of a higher order than that of Scottish and English students when leaving the university; while in the universities, it is beyond comparison superior to anything we have in this country. The Universities are six in number,—Berlin, Halle, Bonn, Breslau, Greifswalde, and Königsberg, for particulars regarding which, see under these names in the Descriptive Notes.

20. **Literature.**—The principal literary names belonging to Prussia are Germans in blood and language, and are therefore enumerated under Germany (par. 20).

21. **Government.**—The Government is an hereditary monarchy; both the legislative and executive powers are lodged in the King, whose authority is nearly absolute, notwithstanding a constitution which he granted to his subjects in 1847. Reigning sovereign, Frederick-William IV., born 1795. The King is a member of the Germanic Confederation, and has four votes in the Diet assembling at Frankfurt-on-the-Main.

The standing *Army* in 1857 consisted of 161,000 men, including 4200 landwehr or militia in active service. Of this force 93,600 men are at the disposal of the Germanic Confederation; but military service for three years is imperative on all the male population. The *Navy* consisted of 55 ships of all sizes, carrying 265 guns: this includes 5 steamers and 36 gunboats. The *Public Debt* in 1858 amounted to £37,742,600; the *Revenue* and *Expenditure* to £19,477,000 respectively.

22. **Commerce** very active, and greatly improved since the establishment of the Zollverein, whose *Exports* in 1852 amounted to £27,763,000, and *Imports* to £29,472,000 (see under "Germany," par 22). The chief exports are articles of agricultural produce, as corn, timber, and wool; and some manufactured goods, especially linen and woollen cloth. The principal imports are tea, sugar, coffee, cotton-wool, printed calicoes, silk, tobacco, wine; and some metals, as gold, mercury, tin, &c.

23. **Manufactures** numerous and important: linen cloth in all the provinces; woollen, silk, and cotton cloth in Rhenish Prussia;

earthenware in Prussian Saxony; machinery at Barmen, Crefeld, and Elberfeld; cast-iron articles, of exquisite workmanship, at Berlin; paper and leather in many places.

24. **Internal Communication** in a highly efficient state, and consisting of many navigable rivers, excellent roads, and a few important canals, connecting the tributaries of the Elbe and Oder, as the *Plauen* and *Finow* Canals, connecting the Oder with the Havel, the *Frederick-William* Canal, connecting the Oder with the Spree.

Extensive lines of *Railway* connect the capital with all the more important towns in the provinces. In 1858 no fewer than 2514 miles were open for traffic, the principal lines being the following:—

Berlin to Stettin, with branches to Cösland and Posen.

Berlin to Hamburg and Kiel.

Berlin to Magdeburg, Hanover, Minden, Crefeld, and Aix-la-Chapelle, with branches to Halle, Münster, Cologne, and Bonn.

Berlin to Dresden and Chemnitz.

Berlin to Frankfurt-on-the-Oder, with a branch to Breslau and Vienna, and another to Danzig and Königsberg.

The *electric telegraph* is in operation along all the lines here mentioned, connecting the capital with the frontiers of the kingdom.

AUSTRIA.

1. **Boundaries.**—N., Poland, Silesia, and the Kingdom of Saxony; W., Bavaria, Switzerland, and Sardinia; S., the Pontifical States, the Adriatic, and Turkey; E., Moldavia and Russia. Omitting Dalmatia and the southern portion of Croatia, which extend southward along the eastern shore of the Adriatic to nearly the 42d parallel, the remainder of the empire lies between lat. 44½° and 51° N., and between lon. 9° 35′ and 26° 35′ E. Vienna, the capital (lat. 48° 12′, lon. 16° 23′), in the centre of the empire, is nearly on the same parallel as Brest, Munich, Czernowitz, and Iekaterinoslav; and on the same meridian as Stockholm, Cape Spartivento, Lake Tchad, and the mouth of the Orange River.

2. **Form and Dimensions.** — Omitting the Tyrol, Venice, and Dalmatia, the general form is that of an oblong square, 670 miles long, by 420 miles broad, having Buda, the capital of Hungary, in the centre; but the extreme length of the empire, from Lake Constance on the W. to the eastern confines of Transylvania, is about 800 miles, and the extreme breadth from N. to S. 690 miles.

3. **Coast-Line.**—The coast-line is wholly confined to the Adriatic, and does not exceed 650 miles, or one mile of coast to every 396

miles of surface, and forming only one-seventh of the entire boundary.

4. **Area.**—The area is estimated at 257,830 square miles, or considerably more than twice that of the British Isles. Austria is, therefore, the largest State in Europe, except Russia, which is eight times larger. By the recent cession of Lombardy to Sardinia (Oct. 1859) the area is reduced to 249,500 square miles. — (See under "Italy," par. 6.)

5. **Population.**—The population in 1854 was 39,411,309, being 153 persons to each square mile. The Italian province, together with Moravia and Bohemia, are the most densely peopled, and the Tyrol, Dalmatia, and Transylvania the most thinly. By the cession of Lombardy to Sardinia, the population is now reduced to 36,401,864, which is slightly more than the population of France, and one-third larger than that of the British Isles.

6. **Political Divisions.**—The empire formerly consisted of fourteen provinces ; but in the end of 1854, according to the *Almanach de Gotha*, it was rearranged into twenty-one provinces. In the following tables, however, we shall regard Carinthia, Carniola, and Trieste as subdivisions of Illyria, instead of separate provinces, and the Buckowina as a subdivision of Galicia ; and thus reduce the number to seventeen provinces, of which nine are German, one Polish, six Hungarian, and one Italian. By the same authority, we further learn that Hungary is now subdivided into five districts, without including the Banat, which, along with the territory lying between the Theiss and the Danube, now forms the Woiwod-Schaft of Servia and the Banat of Temes.

NINE GERMAN PROVINCES.

Bohemia.*—PRAGUE 118, Budweis 9 (Moldau), Pilsen 10 (Bradawka), Kuttenberg 10, Königgrätz 10 (Elbe), Eger 11 (Eger), Reichenberg 13 (Lower Neisse).

Towns between 5000 and 10,000 Inhabitants.—Krumau, Klattau, Leitmeritz, Leipa, Saatz, Chrudim, Leitomischl, Karlsbad, Töplitz, Marienbad, Czaslau.

Austrian Silesia.—TROPPAU 10 (Oppa, *affl.* Oder), Teschen 7 (Olsa), Bielitz 6 (Biala, *affl.* Vistula).

Moravia.—BRÜNN 47 (Schwartza, *sub-affl.* Morava) Iglau 18 (Iglawa), Olmütz 15, Sternberg 11 n. (March or Morava), Prossnitz 10 (Rumza), Neutitschein 10 n. (Oder).

Austerlitz, Nicolsburg, Znaym.

Lower Austria.—VIENNA 579, Krems 5 (Danube), Wiener-Neustadt 12 (Leitha), St Polten 6 (Trasen), Baden 4 (Schwechat).

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* For the pronunciation, see under "Germany," par. 6.

Upper Austria.—LINZ 31 (Danube), Steyer 10 (Ens), Wels 5 (Traun).

Salzburg.—SALZBURG 17, Hallein 6 (Salza, *affl.* Inn).

Styria.—GRÄTZ 55 (Mur, *affl.* Drave), Marburg 5 (Drave).

Illyria (including Carinthia, Carniola, and Trieste or the Littorale).—LAYBACH 17 (Laybach), Klagenfürt 14 (Glan, *affl.* Drave), Görz 11 (Isonzo), Trieste 64 (Gulf of Trieste), Rovigno 10 (west coast).

Idria, Bleibach, Capo d'Istria, Pirano.

Tyrol and Vorarlberg.—INNSBRÜCK 15, Hall 5 (Inn. *tr.* Danube), Trent 13, Roveredo 8 (Adige), Botzen 10 (Eisack), Riva 5 (Mincio).

ONE POLISH PROVINCE.

Galicia and Buckowina.[*]—LEMBERG 75 (Peltew, *tr.* Bug), Cracow 50 (Vistula), Czernowitz 20, Kolomea 13 (Pruth), Sambor 11 (Dniester), Tarnopol 17 (Sered), Stanislawow 11 (Bistrica), Drohobicz 12 (Tiszmanicka), Brody 18 (Styr).

Przemysl, Rzesgow, Bochnia, Sniatyn, Brzezany, Wieliczka.

SIX HUNGARIAN PROVINCES.

Hungary,[†] divided into five districts as follows :—

1. PESTH.—Buda or Ofen 50, Pesth 106, Kalocza 11, Alt-Ofen 11, Waitzen 11, Gran 12 (Danube), Szegedin 50, Vasarhely-Holdmezo 33, Szentes 22, Czongrad 12, Felegy-Hasa 18 n., Keczkemet 32 n., Nagy-Körös 16 n., Czegled 17 n., Szolnok 10 (Theiss), Mezo-Tur 15, Kardszag 12 (Berettyo), Gyongyos 13 n. (Zagyra), Erlau 18 (Erlau), Miskoltz 28 (Sajo), Stuhlweissenburg 15 (Sarvitz).

2. OEDENBURG.—Oedenburg 12 n. (Lake Neusiedler), Raab 16, Papa 12 n. (Raab), Vasarhely-Somlo 25 (Torna), Mohacs 10, Funfkirchen 15 n., Tolna 6, Pacs 5, Foldvar 11 (Danube), Szexard 8 (Sarvitz), Vesprim 11 (Sed), Kesthely 7 (Platten See).

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[*] Rules for the pronunciation of Polish names will be found under "Prussia," par. 6.

[†] The following rules will assist the pupil in pronouncing Hungarian proper names :—

ö, *ü*=same characters in German.
g=*g* in go ; this consonant is always hard.
j=*y* in yonder : as Baja (*Bâ'ya*).
s=*sh* in shall ; as Sajo (*Shâ'yo*).
cz=*ts* in wits ; as in Debreczin, Czongrad (*De-bret'sin*, *Tson-grad'*).
cs=*ch* in church ; as in Mohacs, Pancsova (*Mo-hatch'*, *Pan-chō'va*).
sz=*sh* in shall ; as Szegedin, Veszprim (*She-ge-din'*, *Vesh'prim*).
zs=*s* in vision or French *j* ; Zsolna, Zsellesz (*Zhol'na*, *Zhel'lesh*).
gy=*di* in French dieu ; as Magyar, Gyongyos (*Mad-yar'*, *Dyon'dyos*).
ly=*ll* in million=*gl* in Italian ; as Vasarhely (*Va-shar-hel'*).
ny=*ni* in opinion=*ñ* Spanish=*gn* in French, as Böszörmeny (*Bosh-or-ming'*).

Each of the last seven combinations is to be regarded as one letter of a simple sound, like *th* and *sh* in English.

3. PRESBURG.—Presburg 42, Komorn 20 (Danube), Schemnitz 19 n., Kremnitz 5 n., Neusohl 12 (Gran), Tyrnau 6 (Waag), Miava 10 (Miava, *affl.* Morava).

4. KASCHAU.—Kaschau 13, Iglo 5, Leutschau 6 (Hernad, *affl.* Theiss), Rosenau 9, Schmölnitz 6 (Sajo), Eperies 9 (Tarcza), Tokay 6, Szigeth 7 (Theiss), Bodrog 5, Uj-hely 7 n., Munkacs 5 (Bodrog), Unghvar 5 (Ungh, *affl.* Bodrog).

5. GROSSWARDEIN.—Grosswardein 21, Böszörmeny 15 (Sebes-Koros, *sub-affl.* Theiss), Szarvas 17, Bekes 18, Czaba 23, Gyula 15 (Körös), Debreczin 63 n., Szoboszlo 10 (Koselo), Mako 22, Czanad Arad 35 (Maros), Nyiregyhaza 14 n. (Theiss), Szathmary 10 (Szamos), Nagy-Karoly 12 (Kraszna), Nagy-Bany 6 (Lapos).

Transylvania.—KLAUSENBURG 19 (Szamos), Karlsburg 12, Maros-Vasarhely 10 (Maros), Kronstadt 24 n. (Aluta), Hermanstadt 19 (Zibin).

Dees, Bistritz, Nagy-Enyed, Szasz-Regen, Gyergyos, Medias, Schlassburg or Segesvar, Thorda.

Banat and Servia.—TEMESWAR 21 n., Lugos 6 (Temes, *affl.* Danube), Versetz 17 n. (Karash), Neusatz 20, Vukovar 6, Apatin 5, Zombor 22 n., Baja 14 (Danube), Nagy-Kikinda 12, Zenta 15, Theresianopel 34 n. (Theiss), Nagy-Becskerek 15, Halzfeld (Alt-Bega), Lippa 8 (Maros).

Croatia and Sclavonia.—Agram 14 (Save), Posega 7 (Posega, *affl.* Save), Petrinia 5, Karlstadt 5 (Kulpa), Essek or Eszek 13, Warasdin 10 (Drave), Fiume 10, Zeng 5, Karlopago 2 (Adriatic).

Dalmatia.—ZARA 7, Sebenico 7, Spalatro 10, Ragusa 10 (Adriatic), Castel-Nuovo 7, Cattaro 5 (Gulf of Cattaro).

Military Frontier.*—PETERWARDEIN 7, Pancsova 11, Semlin 13, Karlowitz 6 (Danube), Mitrovicz 5, Brod 2, Old Gradiska 2 (Save).

ONE ITALIAN PROVINCE.

Venice.†—*Venice* 106, Bassano 12 (Brenta), Adria 11 (Po), *Rovigo* 10, *Verona* 51 (Adige), Chioggia 26, *Padua* 53, *Vicenza* 30 (Bacchiglione), *Treviso* 18 (Sile), *Belluno* 10 (Piave), *Udine* 23 (Roja).

Mestre, Cittadella, Lendinara, Legnago, Este, Tiene, Schio, Conegliano, Feltrè, Melo, Serravalla.

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* The Military Frontier is a strip of country comprising an area of 18,165 square miles, and extends along the Turkish frontier from the Adriatic eastward to Moldavia. It consists of parts of Croatia, Sclavonia, the Banat, and Transylvania. All landed property in this district belongs exclusively to the Government, but is held by a kind of military fief on condition of military service in peace and war. In time of war it furnishes 50,000 men. This system of government was organised in 1807, as a protection against the Turks.

† The capitals of delegations are given in *Italics*. For pronunciation see under "Italy."

7. **Descriptive Notes.**—The seventeen provinces contain 195 towns of above 5000 inhabitants; one hundred and fifteen above 10,000; thirty-four above 20,000; thirteen above 50,000; and four (Vienna, Prague, Pesth, and Venice) above 100,000.

THE NINE GERMAN PROVINCES contain fifty-six towns of above 5000; twenty-seven above 10,000; six above 20,000; and four (Vienna, Prague, Grätz, and Trieste) above 50,000.

Prague (Ger. *Prag*), an ancient, large, and fortified city, on both sides of the Moldau, is one of the finest in the empire, and of great historic celebrity: it is the chief seat of the Bohemian manufactures, which consist of thread, linen, cotton, iron, woollen, glass, and paper; contains the oldest university in Austria, which, in 1842, had seventy-one professors and 2741 students. Prague contains the tomb of Tycho Brahe, and was the scene of the labours of Jerome of Prague and of John Huss, the celebrated martyrs. *Pilsen* is noted for its iron mines. *Königgrätz*, a fortified town on the Elbe. *Eger*, where Wallenstein and his friends were assassinated in 1634. *Reichenberg*, a busy manufacturing town on the Neisse. *Brünn*, the principal seat of the woollen manufactures of Austria: near it the castle of *Spielberg*, a strong prison for political offenders; and at a short distance *Austerlitz*, the scene of Napoleon's triumph in 1805. *Iglau* has numerous manufactures, and silver and lead mines in the vicinity. *Olmütz*, a strongly fortified city, once the capital of Moravia, contains a university which is attended by upwards of 550 students; and has important woollen, linen, and cotton manufactures. *Troppau*, the capital of Austrian Silesia, is noted for its manufactures of cloth and arms. VIENNA, the capital of the Archduchy of Austria and of the Austrian empire, is one of the largest and most elegant cities on the Continent; it is situated on the right bank of the Danube, and near the centre of the empire; contains numerous splendid palaces, several of which are converted into magnificent public libraries, one of which, the Imperial Library (founded in 1440, the year in which printing was invented) contains 320,000 volumes and 16,000 MSS. The university is celebrated as a medical school, and had, in 1842, eighty-five professors, 5400 students, and a library of 120,000 volumes. Vienna is surrounded by noble botanic gardens, containing the richest and rarest plants. It is the chief manufacturing city in the empire; has great commerce on the Danube and by railways, and three great annual fairs. Here sat the celebrated Congress of Vienna (in 1815) which fixed the present limits of the different European states. *Linz*, a fortified city on the Danube, 100 miles above Vienna, is the capital of the recently-formed province of Upper Austria. *Steyer*, noted for its cutlery and iron-works. *Salzburg*, formerly the capital of a circle, and now of the Duchy of Salzburg, is famous for its salt-mines, and for being the birthplace of Haydn and Mozart, the eminent composers. *Grätz*, a populous city on the Mur, containing a university which has twenty-eight professors and about 1000 students; also an institution, called the Johanneum, containing rich museums of zoology, botany, mineralogy, and coins; numerous manufactures of textile and hardware goods; and the centre of the trade between the capital and Trieste. *Laybach*, the nominal capital of Illyria, has an active transit trade between Vienna and Trieste, with manufactures of porcelain, refined sugar, and linen fabrics. *Klagenfürt* has important manufactures of silks and woollens. *Görz*, on the Isonzo, has manufactures of silk, leather, &c., and a brisk general trade; here died Charles X., the ex-king of France. *Trieste* or *Triest*, a populous city on the Adriatic, and the principal seaport for Austrian exports; in 1853 these were valued at £1,800,000, and the imports at £4,000,000: it is the great seat of the foreign commerce of the empire; maintains a large mercantile fleet; and here reside consuls from most commercial nations. *Idria,* famous for its quicksilver mines, inferior only to those of Almaden in Spain. *Innsbrück* or *Innsprück*, on the Inn, capital of the Tyrol, has a university with twenty-four professors, and (in 1842) 416 students; there is also a number of other educational establishments; with manufactures of silk, woollen, and cotton goods, and considerable trade. *Trent* (Ger. *Trient*), on the left bank of the Adige, is chiefly memorable for the Council of ecclesiastics held here in 1545-1563. *Botzen* or *Bolsano,* has manufactures of silk and woollen fabrics, hosiery, and leather.

GALICIA AND BUCKOWINA, or the Polish province, contains fifteen towns of above 5000 inhabitants; nine above 10,000; three above 20,000; and two (Lemberg and Cracow) above 50,000.

Lemberg (Pol. *Lwow*), on the Peltew, has a university, attended by 4000 students, and numerous other literary establishments; great trade in corn, cattle, and coal; and several manufactures. One-third of the population are Jews, who are also numerous in all parts of Galicia. *Cracow* (Ger. and Pol. *Krakau*), the ancient capital of Poland, and more recently of a small republic which was annexed to Austria in 1846, is celebrated for its cathedral, which contains the tombs of many Polish kings; it has a university, the library of which is rich in MSS.; and near it is a tumulus erected to the memory of the heroic Kosciusko, the William Tell of Poland, who died in Switzerland in 1817. *Czernowitz,* capital of the new province Buckowina, has manufactures of clocks, hardware, and silver goods. *Sambor, Bochnia,* and *Wieliczka* are famous for their magnificent mines of rock-salt, the last named being the most celebrated in the world. It contains a subterranean town, with streets, churches, statues, &c., all cut out of the solid salt rock, the effect of which is very striking; but the most remarkable circumstance is that the mine contains a small lake and rivulet of fresh water. *Drohobicz* has iron-mines, salt-works, and pitch-wells in the vicinity. *Brody* maintains an extensive trade with Russia, Poland, and Turkey.

THE SIX HUNGARIAN PROVINCES contain one hundred and thirteen towns of above 5000 inhabitants; sixty-nine above 10,000; nineteen above 20,000; and three (Buda, Pesth, and Szegedin) above 50,000.

Buda and *Pesth*, on opposite sides of the Danube, but connected by a huge suspension-bridge, form together the capital of this ancient kingdom, which is now reduced to the rank of an Austrian province. Buda (Ger. *Ofen*), derives its name from its hot sulphur-springs. It is an ancient city, was long in possession of the Turks, who were expelled in 1686, and still contains the regalia of Hungary; it carries on an extensive commerce in wine. *Pesth* contains a university which has 49 professors, is attended by about 1000 students, and has a library of 60,000 volumes, including a great number of Hungarian manuscripts. *Szegedin,* on the Theiss, and in the centre of the Hungarian plain, is a place of great trade. *Vasarhely-Holdmezo* has several great annual fairs. *Keczkemet* has a large trade in corn, wine, and fruit. *Erlau* maintains an extensive trade in red wines. *Miskoltz,* with iron-mines, from which the best steel in the empire is made. *Oedenburg,* the capital of a district of same name, near Lake Neusiedler, and on the Raab branch of the Vienna and Cilly railway: its population is chiefly German, and it is an extensive mart for wine grown in the vicinity. *Raab* or *Nagy-gyor,* at the confluence of the Raab and Danube, is a steam-packet station, and possesses extensive trade: in June 1809 the French defeated the Austrians here. *Vasarhely-Somlo,* a large town on the Torna, extensively engaged in raising wine and tobacco. *Presburg,* the capital of a district of same name, and, till 1784, of all Hungary, continues to be the seat of the Hungarian Diet. The Treaty of Presburg, which ceded Venice to the French, and the Tyrol to Bavaria, was concluded here in 1805. *Komorn,* at the confluence of the Danube and Waag, is one of the strongest fortresses in Europe. *Schemnitz* and *Kremnitz,* two celebrated mining-towns near the Gran, but on its opposite sides; the former famous for its mines of gold, silver, lead, copper, iron, sulphur, and arsenic; and the latter for its gold and silver mines. *Neusohl* has also celebrated copper mines in the vicinity. *Kaschau,* the capital of a Hungarian district of same name, situated amidst delightful scenery on the Hernad, and resorted to in winter by the upper classes, has a population of 13,000. *Rosenau,* an episcopal city, with linen bleachfields and mines of copper, iron, antimony, and lead. *Schmölnitz,* noted for its industry, hydraulic machinery, mint, and mines of silver and copper. *Eperies,* with a celebrated opal-mine in the vicinity. *Tokay,* on the Theiss, is noted for its wines. *Grosswardein,* capital of a district of same name, has hot mineral springs in the vicinity, and is strongly fortified. *Debreczin,* a large manufacturing commercial city, with a Calvinistic college attended by about 2000 students, being the most important Calvinistic institution in the empire. *Mako,* largely engaged in the wine manufacture. *Arad* has the largest cattle-market in Hungary. *Nyiregyhaza,* a considerable town near the left bank of the Theiss, contains several churches and some soda and salt works. *Klausenburg,* the capital of Transylvania, and the seat of the Provincial Diet, on the Szamos, is surrounded by walls, and entered by six gates; has Roman Catholic, Reformed, and Unitarian colleges; manufactures of woollen cloths, china ware, and paper, and is the birthplace of Mathias Corvinus, one of the greatest kings of Hungary, who conquered Austria in 1485, and died in 1490. *Karlsburg,* a small fortified town on the Maros, having in its vicinity the richest gold mines in the empire. *Kronstadt,* a considerable town near the Aluta, and the most populous, commercial, and industrious place in Transylvania: it is the residence of several wealthy Greek merchants, and is largely engaged in printing and in the manufacture of paper. *Hermanstadt,* the residence of the military commander of Transylvania, a Greek bishop's see, and the seat of Roman Catholic and Lutheran gymnasia, and a fine national museum. *Temeswar* or *Temesvar,* the capital of the new Austrian province Banat and Servia, is a strongly fortified town on the Temes, an affluent of the Danube; the population includes Hungarians, Germans, Greeks, Wallachs, and Jews: it has several manufactures of silk and woollen stuffs, iron-wares, paper, tobacco, and oil, and an extensive trade: it was taken by the Turks, under Solyman II., in 1551, and retaken by Prince Eugene in 1716. *Versetz,* a fortified town near the Karash, engaged in raising wine, silk, and rice. *Neusatz,* one of the steamboat stations on the Danube, is a place of great trade. *Zombor,* with manufactures of silk, and trade in grain and cattle. *Theresianopel* or *Theresianstadt,* the most populous town in the Banat, consisting of an aggregation of villages, with manufactures of linen, leather, and tobacco, and trade in agricultural produce. *Agram,* formerly the capital of Croatia, and now of the united province of Croatia and Sclavonia, a considerable town on the Save, the residence of the viceroy and the seat of the superior courts; contains a fine cathedral and several monasteries. *Poscega* or *Posega*, a small town engaged in the production of wine and silk: it was taken from the Turks in 1787. *Eszek* or *Essek*, a strongly fortified town on the Drave, with barracks capable of accommodating 30,000 men. *Warasdin*, a fortified town on the same river, with sulphur baths and extensive vineyards. *Fiume*, a royal free seaport town on the Gulf of Quarnero, and the outlet for the produce of Hungary. *Zara*, a small town on the Adriatic, capital of the kingdom of Dalmatia, the see of an archbishop, and strongly fortified. *Spalatro*, noted for its Roman antiquities, is the most important seat of commerce in Dalmatia. *Ragusa*, a strongly fortified seaport town with an active coasting trade; is frequently visited by earthquakes. *Peterwardein*, so called after Peter the Hermit, who here marshalled the first crusade, is a most formidable military position on the south or right bank of the Danube, opposite Neusatz, with which it communicates by a bridge of boats: it was the scene of a great victory over the Turks in 1716. *Pancsova*, a considerable trading town on the left bank of the Danube, is well fortified. *Semlin*, a poor mean-looking frontier town near the junction of the Danube and Save; near it is the quarantine station of Contumatz, the most important lazaretto on the Turkish frontier.

The ITALIAN PROVINCE contains twenty-two towns of above 5000 inhabitants; eleven above 10,000; seven above 20,000; and three (Venice, Verona, and Padua) above 50,000.

Venice (Ital. *Venezia*, anc. *Venetia*), a famous city of Italy, situated in the centre of a large lagoon, and near the mouth of the Brenta, on a cluster of small islands, separated by numerous canals, which are crossed by 306 bridges, and the whole connected with the mainland by one immense bridge of 222 arches, forming part of the railway to Padua. It was for many centuries the capital of a celebrated republic, which dates its origin from the invasion of Attila in 452, and which attained its acme of prosperity in the fifteenth century, when it was reckoned the first maritime and commercial power in the world. It began to decline in the sixteenth century; its overthrow was completed by Napoleon in 1797; it was made over to Austria in 1814, and now forms the capital of the province Venetia, and the headquarters of the Austrian navy. It is the birthplace of Canova, one of the greatest of modern sculptors. *Bassano*: here the French defeated the Austrians in 1796. *Adria*, an ancient seaport town, which gave its name to the Adriatic, is now fourteen miles inland, and in the centre of the delta of the Po, contains many remains of splendid edifices. *Verona*, a large, strongly fortified city on the Adige, of great historical interest, and containing numerous Roman remains, especially an amphitheatre, the most perfect of its kind now existing; renowned for its dye-works and silk-mills; and the birthplace of Cornelius Nepos, Catullus, the elder Pliny, Paul Veronese, and several other eminent men. *Chioggia*, on an island in the Venetian lagoon, is a fortified seaport town of considerable commercial importance. *Padua*, a celebrated and strongly fortified city on the Bacchiglione, with a university once very famous and attended by 1800 students, among whom were Tasso and Columbus. It is the birthplace of Livy the historian, and Belzoni the traveller. *Vicenza*, an important manufacturing city, extensively engaged in the silk trade; birthplace of Palladio. *Treviso* and *Udino* have numerous manufactures of silk, cotton, linen, and paper.

8. **Capes.**—Salvatore and Punta di Promontore in the south of Illyria.

9. **Islands.**—Two groups in the Adriatic—viz. the Illyrian archipelago in the Gulf of Quarnero: principal, Veglia, Cherso, Lossini, Arbe, and Pago; and the Dalmatian archipelago on the west coast of Dalmatia: principal, Ugliano, Grossa, Brazza, Lesina, Curzola, and Meleda.

10. **Seas, Gulfs, and Straits.**—The Adriatic in the S.W., the chief branches of which are—Gulf of Venice, E. of the city of that name; Gulf of Trieste and Gulf of Quarnero, S. of Illyria; Morlacca Channel, between Croatia and the Illyrian archipelago; Gulf of Cattaro, S.W. of Dalmatia.

11. **Mountains and Plains.**—Austria is a highly mountainous country, for though it contains several extensive plains, as the Plain of Hungary, the Plain of Lower Austria, and the Italian Plain, it is traversed by three great mountain-systems—viz. the Alps, the Sudetic Mountains, and the Carpathians.

The ALPS in the S.W., extending from the Swiss frontier to near Vienna, and consisting of several chains, as the *Carnic Alps*, between Lombardy and the Tyrol; highest summit La Marmolata in S.E. of Tyrol, 11,500 feet, between the basins of the Piave and Drave;—the *Rhætian Alps* in Tyrol, between the basins of the Adige and Inn; with Ortler Spitz, the culminating-point of Austria, 12,850 feet, in S.W. of Tyrol;—the *Noric Alps*, extending from the Tyrol to near Vienna, and separating the Danube from the Drave; highest summit, Gross Glockner, in E. of Tyrol, 12,431 feet;—the *Julian Alps* in Illyria, and the *Dinaric Alps* in Croatia and Dalmatia, between the Save and the Adriatic; highest summit, Mount Terglou, in central Illyria, 10,866 feet.

The SUDETIC or BOHEMIAN and MORAVIAN MOUNTAINS, forming the N.W. frontier, and consisting of the *Böhmerwald*, *Erzgebirge*, *Riesengebirge*, and Sudetic Mountains (see under "Germany" and "Prussia").

The KRAPACKS or CARPATHIANS in the east, forming a great curve, one extremity of which abuts on the Danube at Presburg, and after separating Hungary from Galicia, and Transylvania from Moldavia and Wallachia, returns to the Danube at Orsova. The Carpathians form a part of the great watershed of Europe, separating the basin of the Danube from those of the Vistula and Dniester. They are usually divided into two great sections—viz., the *Western Carpathians*, between Hungary and Galicia, and forming a crescent-shaped ring around the head-waters of the Theiss: highest summit, Lomnitzer Spitze in the Tatra group, lon. 20° 16', 8636 feet; and the *Eastern Carpathians* or *Transylvanian Alps*, between Transylvania and the Danubian principalities, separating the basin of the Theiss from that of the lower Danube: highest elevation, Mount Negoi, east of the

Rothenthurm Pass, 8338 feet, and Mount Botschetje, south of Kronstadt, 8249 feet. Lomnitzer Spitze is the culminating-point of the Carpathians; and it, together with many ot[illegible] summits, rise far above the snow-line, which, in this latitude, [illegible] about 6000 feet. Until the recent survey, Mount Botschetje was regarded as the culminating-point, and next to it Ruska Poyana (see p. 74).

Mountain-Passes.—The principal passes are the *Jablunka Pass*, on the route from Presburg to Cracow, lon. 19° E.; *Borgo Pass*, between Bistritz and Bukowina; *Gymes Pass*, between Transylvania and Moldavia; *Bozo Pass*, *Tursburg Pass*, *Rothenthurm Pass*, and *Vulcan Pass*, between Transylvania and Wallachia; *Stelvio Pass*, 9100 feet, from Bormio in Lombardy to Glurns in the [illegible]yrol. The Austrian Government has made all these passes available for wheeled carriages, at an enormous expense.

12. **Principal River-Basins.**—The seventeen capitals are situated in the following six basins, reckoning the Adriatic

Basin.	Direct Length in Eng. Miles.	Area in Geographical Sq. Miles.	Capitals of Provinces.
Danube, ...	980	250,000	Peterwardein, Buda, VIENNA, Linz, Temeswar, Agram, Laybach, Klausenburg, Grätz, Brünn, Innsbrück, Salzburg.
Po, ...	280	29,950	Venice.
Adriatic, ...	500	...	Zara.
Elbe,............	420	41,360	Prague.
Oder,...........	360	39,140	Troppau.
Vistula, ...	360	56,600	Lemberg.

13. **The River-System of Central Europe.**—The following table comprises the river-system of Central Europe from the Pregel to the Rhine, together with the basin of the Danube and the N.E. coast of the Adriatic. Capitals of Kingdoms and Provinces are distinguished by SMALL CAPITALS, towns of more than 10,000 inhabitants, by Roman letters, and those between 5000 and 10,000 by *Italics*.

Basins inclined to the Baltic.

Rivers.	*Towns.*
Pregel,	*Pillau*, KÖNIGSBERG, *Insterburg*, *Gumbinnen.*
Passarge,	*Braunsberg.*
Elbing,	Elbing.
Vistula,	Danzig, *Marienburg*, *Marienwerder*, n., Graudenz, *Kulm*, Bromberg, n., Thorn, PLOCK, WARSAW, *Sandomir*, Cracow.
Brahe, *l*	Bromberg.
Bzura, *l*	*Lowicz*, *Ozorkow.*
Bug,	*Brzesc-Litewski.*
Narew,	Pultusk.
Bobr,	Augustow, n.
Bialy,	Bialystok.
Liwece, *l*	*Siedlec.*
Lui,	*Vladimir.*
Peltew, *l*	LEMBERG.
Radomka, *l*	RADOM.
Wieprz,	*Zamosz.*
Bystricza, *l*	LUBLIN.
Saan,	Sandomir, Przemysl.
Wisloka, *l*	*Rzeszow.*
Nida, *l*	*Pinczow*, *Kielce.*
Raba,	*Bochnia.*
Biala, *l*	*Bielitz.*
Stolpe,	Stolpe.
Wipper,	*Rugenwalde.*
Niesenbecke,	*Cöslin.*
Persante,	*Colberg.*
Rega,	*Treptow*, *Greifenberg.*
Oder,	STETTIN, *Schwedt*, Königsberg, n., *Cüstrin*, *Brietzen*, Frankfurt, *Crossen*, Glogau, BRESLAU, *Ohlau*, Brieg, *Oppeln*, *Ratibor*, Neutitschein, n.
Ucker, *l*	*Pasewalk*, Prenzlow.
Ihna,	*Golnow*, Stargard.
Wartha,	Landsberg, POSEN, *Czentochow.*
Netze,	*Inowrazlaw.*
Obra, *l*	*Meseritz*, Lissa.
Wilna,	*Gnesin.*
Prosna, *l*	Kalisz, Kempen, n.
Lower Neisse, *l*	Guben, Görlitz, Reichenberg.
Mandau, *l*	Zittau.
Bober, *l*	*Sagan*, *Sprottau*, *Bunzlau*, *Kirschberg.*
Queiss, *l*	*Laubau.*
Lunze, *l*	Grünberg.
Bartsch,	*Fraustadt*, n., Rawitsch.
Orta,	*Krotoszyn.*
Katzbach, *l*	Liegnitz, *Jauer*, n., Goldberg.
Weistritz, *l*	Schweidnitz.
Striegauer, *l*	*Striegau.*
Peile,	*Reichenbach.*

Basins inclined to the Baltic (continued).

Rivers.	*Towns.*
Oelsa,	Oels.
Ohlau, *l*	*Strehlen*, *Minsterberg.*
Upper Neisse, *l*	Neisse, *Frankenstein*, n., *Glatz.*
Holzemplotz, *l*	*Neustadt*, n. (on the Braun).
Klodnitz,	*Gleiwitz.*
Zinna, *l*	*Leobschütz.*
Olsa,	*Teschen.*
Oppa, *l*	TROPPAU.
Peene,	*Wolgast*, n., *Anclam*, *Demmin.*
Tollense,	*Treptow*, *New Brandenburg.*
Strait of Gellen,	Greifswalde, n., Stralsund.
Warnow,	Rostock.
Nebal,	*Gustrow.*
Co. of Meck.-Sch.,	Wismar.

Basins inclined to the North Sea.

Elbe,	GLÜCKSTADT, Altona, HAMBURG, *Harburg*, *Lauenburg*, MAGDEBURG, *Schönebek*, *Barby*, DESSAU, *Wittenberg*, *Torgau*, *Oschatz*, Meissen, DRESDEN, *Pirna*, *Töplitz*, *Leitmeritz*, Kuttenberg, Königgrätz.
Schwinge, *l*	*Stade.*
Stör,	*Itzehoe.*
Ilmenau, *l*	Lüneburg.
Elde,	GRABOW, *Ludwigslust*, n., *Parchim.*
Biese, *l*	*Gardelegen*, n. (on the Milde).
Uchte,	*Stendal.*
Stepnitz,	*Perleburg.*
Dosse, *l*	Wittstock.
Havel,	*Rathenau*, Brandenburg, Potsdam, Spandau, NEU-STRELITZ.
Rhin,	Ruppin.
Nuthe, *l*	*Luckenwalde*, Jüterbogk.
Spree, *l*	BERLIN, *Kottbus*, *Spremberg*, *Bautzen.*
Ihle,	Burg.
Ohre, *l*	Neu-Haldensleben.
Nathe,	*Zerbst.*
Saale, *l*	*Kalbe*, BERNBURG, Halle, Merseburg, *Weissenfels*, Naumburg, *Jena*, RUDOLSTADT, *Schleitz*, n., Hoff.
Bode, *l*	Quedlinburg.
Holzemme,	Halberstadt.
Fuhne,	Kothen, n. (on the Ziethe).
Wipper, *l*	Aschersleben, n. (on the Eine).
Böse, *l*	Eisleben.
White Elster,	Merseburg, Leipsic, Zeitz, Gera, Ronneburg, GREITZ, Plauen.
Pleisse,	*Altenburg*, Schmöllin, *Werdau.*
Goltsch,	*Reichenbach.*

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Unstruth,	*Langensaltza*, Mühlhausen.
Helme, *l*	*Sangerhausen*, n.
Zerza, *l*	Nordhausen.
Wipper, *l*	SONDERSHAUSEN, Frankenhausen.
Gera,	Erfurt, Arnstadt.
Leina,	GOTHA.
Ilm, *l*	WEIMAR.
Lemnitz, *l*	*Lobenstein.*
Mulde, *l*	*Eilenburg, Grimma, Meerane*, n., *Zwickau, Lössnitz*, Schneeberg.
Münzbach,	*Dobeln, Rosswein, Nossen*, Freiberg.
Zschoppau, *l*	*Mittweida,Hainech,Frankenberg*,Zschoppau.
Chemnitz,	Chemnitz.
Black Elster,	*Wittenberg.*
Roda, *l*	*Grossenhein.*
Pulnitz,	*Leipa.*
Eger, *l*	*Leitmeritz, Saatz*, Eger.
Moldau, *l*	PRAGUE, *Budweis, Krumau.*
Beraun, *l*	Pilsen, *Marienbad*, n.
Bradawka,	*Klattau.*
Czidlina,	*Gitschin.*
Isar,	*Jungbunzlau.*
Chrudimka, *l*	*Chrudim.*
Lauchna, *l*	*Leitomischel.*
Weser and Werra,	BREMEN, *Nienburg*, Minden, Hameln, Münden; Eschwege, Schmalkald, n., MEININGEN, Hildburghausen.
Hunte, *l*	OLDENBURG.
Berne,	Berne.
Aller,	Werden, Celle or Zell, Helmstadt, n.
Leine, *l*	HANOVER, Eimbeck, Göttingen.
Innerste,	Hildesheim.
Ruhine,	Nordheim.
Soze,	Osterode.
Ocker, *l*	BRUNSWICK, Wolfenbüttel, Goslar.
Zellerbach,	Klausthal.
Aue,	BÜCKEBURG.
Werre, *l*	Herford, Bielefeld, n., DETMOLD.
Diemel, *l*	AROLSEN, n. (on the Aar).
Fulda, *l*	CASSEL, Hersfeld, Fulda.
Eder, *l*	Corbach, n. (on the Itter).
Hörsel,	Eisenach.
Hasel,	Suhl, n. (on the Lauter).
Jahde,	*Kniphausen.*
Co. of E. Friesland,	*Norden.*
Ems,	Emden, *Leer.*
Haase,	Osnabrück.
Ahe, *l*	MÜNSTER.
Hunse,	GRÖNINGEN.

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Hoorn Diep,	ASSEN.
Vecht,	*Enschede.*
Zwarte,	ZWOLLE.
Reest,	*Meppel.*
Rhine,	*Kampen*, *Raalte*, Deventer, Zutphen (all on the Yssel branch); AMSTERDAM (on the Amstel); Leyden, UTRECHT, ARNHEIM (on the Old Rhine); Gouda (on the Leck); Gorkum, Thiel, Nymegen (on the Waal); *Emmerich*, *Cleves*, n., Wesel, Crefeld, n., Düsseldorf, *Neuss*, *Mülheim*, COLOGNE, Bonn, *Neuwied*, Coblentz, *Bingen*, Mayence, Worms, Mannheim, Speyer, CARLSRUHE, STRASBOURG, BASLE, SCHAFFHAUSEN, *Constance*, VADUZ, Coire.
Lippe,	*Hamm*, Lippstadt, Padderborn.
Sösterbach,	Söst.
Ruhr,	*Duisburg*, Mulheim, *Essen*, n., *Arensberg.*
Emster,	Dortmund.
Baarenbach, *l*	Iserlohn.
Wipper,	Remscheid, n., *Solingen*, *Ronsdorf*, Elberfeld, Barmen.
Lennep, *l*	*Lennep.*
Sieg,	*Siegen.*
Nette, *l.*	*Mayen.*
Moselle, *l*	Coblenz, Treves (see under "France" for the Moselle and its affluents), Thionville, METZ, *Pont-à-Mousson*, Nancy, *Toul*, EPINAL, *Remiremont.*
Lahn,	*Giessen*, *Marburg.*
Nahe, *l.*	*Kreuznach.*
Glau,	*Kaiserslautern*, n.
Salzbach,	WIESBADEN.
Mayn,	Mayence, FRANKFORT, Offenbach, HOMBURG, n., Aschaffenberg, Hanau, Würzburg, *Kitzingen*, *Schweinfurt.*
Nedda,	HOMBURG, n. (on the Eschbach).
Tauber, *l*	*Rothenburg.*
Regnitz, *l.*	Bamberg, Erlangen, Furth, Schwabach.
Pegnitz,	Nürnberg.
Rezat,	Anspach.
Itz,	COBURG.
Red Mayn	Baireuth.
Darm,	DARMSTADT.
Weschnitz,	*Weinheim.*
Neckar,	Mannheim, Heidelberg, Heilbronn, Ludwigsburg, *Cannstadt*, *Eslingen*, *Kirchheim*, *Tübingen*, Reutlingen, n., *Rottenburg.*

Basins inclined to the North Sea (continued).

Rivers.	*Towns.*
Kocher,	*Hall.*
Ens, *l*	*Pforzheim.*
Rems,	*Gmünd.*
Nesenbach, *l*	STUTTGART.
Fils,	*Göppingen.*
Eschatz,	Reutlingen, Ehningen.
Starzel,	HECHINGEN.
Speyer, *l*	Speyer, *Neustadt*-au-der-Hardt.
Salzbach,	*Bruchsal, Brotten.*
Queich, *l*	*Landau.*
Murg,	*Rastadt.*
Oosbach, *l*	*Baden-Baden.*
Moder, *l*	*Haguenau, Bischwiller.*
Zorn, *l*	*Saverne, Phalsburg.*
Kinzig,	Lehr, n. (on Schutter).
Ill, *l*	STRASBOURG, Schelestat, COLMAR, Mühlhausen.
Bruche, *l*	*Oberheim.*
Liepvrette, *l*	St Marie-aux-Mines.
Thur, *l*	Muhlhausen, *Thann.*
Elz,	Freiburg, n. (on the Dreisam).
Ergolz, *l*	LIESTHAL.
Aar, *l*	AARAU, SOLEURE, BERNE, *Thunn.*
Limmat,	ZURICH, *Wadenschwyl.*
Linth, *l*	GLARUS.
Reuss,	LUCERN, ALTORF.
Lorze,	ZUG.
Sarner Aa, *l*	SARNEN.
Engelberg Aa, *l*	STANZ.
Muota,	SCHWYTZ.
Emmen,	SOLEURE, *Langnau.*
Thiele, *l*	BIEL or BIENNE, NEUFCHÂTEL.
Sarine, *l*	FREIBURG.
Toess, *l*	*Winterthur.*
Thur, *l*	FRAUENFELD, n. (on the Murg).
Sittern,	*Herisau,* APPENZELL.
Steinach, *l*	St Gall.
Goldach, *l*	Trogen.

Basins inclined to the Black Sea.

Danube,	Baba-Dagh (*on Porticha Mouth*), Tultcha (*on Sulina Mouth*), Kilia and Ismael (*on Kilia Mouth*), *Isaktchi, Reni,* Galacz, *Ibrail* or *Brahilov, Hirsova, Rassova,* SILISTRIA, *Oltenitza, Giurgevo,* Rustchuk, Sistova, Nicopoli, Widdin, *Orsova,* Semendria, Pancsova, n., BELGRADE, Semlin, *Carlowitz,* PETERWARDEIN, *Vukovar,*

Basins inclined to the Black Sea (continued).

Rivers.	*Towns.*
Danube (*continued*),	Neusatz, *Apatin*, Zombar, n., Mohacs, Funfkirchen, n., Baja, *Tolna*, Kalocsa, *Paks*, *Solt*, Földvar, *Dunaveese*, Pesth, BUDA, Alt-Ofen, Waitzen, Gran, *Dorog*, Komorn, Presburg, VIENNA, Linz, Passau, Straubing, Ratisbon or Regensburg, *Ingolstadt*, *Neuburg*, Ulm, *Tuttlingen*.
Jalpuch, *l*	Ismael.
Pruth, *l*	*Reni*, Czernowitz, *Sniatyn*, Kolomea.
Baglui,	JASSY.
Sereth, *l*	Galacz, *Adjiud*, n., *Baku*, *Roman*.
Milkov,	*Foktchany*.
Jalomnitza, *l*	*Tergovist*.
Lom,	*Osman-Bazar*, *Rasgrad*, n.
Argish, *l*	BUCHAREST, n. (on the Dumbovitza).
Jantra,	Tirnova.
Alt, *l*	Kronstadt, n.
Zibin,	Hermanstadt.
Isker,	Sophia.
Schyl, *l*	*Krajova*.
Harasch, *l*	Verschitz, n.
Morava,	Semendria, n., *Passarovicz*.
West Morava, *l*	*Karanovacz*.
Ibar,	Novi-Bazar, Pristina, Kossova.
Nissawa,	Nissa or Nisch.
Karasch, *l*	Versetz, n.
Temes, *l*	Pancsova, TEMESWAR, Lugos.
Save,	BELGRADE, *Schabacz*, *Mitrovitz*, AGRAM.
Drina,	Zvornik.
Bosna,	BOSNA-SERAÏ, n. (on the Migliazza).
Posega, *l*	*Posega*.
Verbas,	*Banialuka*.
Unna,	*Gradiska*, *Dubicza*, Novi.
Kulpa,	*Petrinia*, *Carlstadt*.
Laybach,	LAYBACH.
Theiss, *l*	Nagy-Kikinda, Zenta, Theresianstadt, Szegedin, Vasarhely, Szentes, Czongrad, Felegyhaza, n., Keczkemet, n., Nagy-Körös, n., Nyiregyhaza, Czegled, Szolnok, Miklos, *Tokay*, *Szigeth*.
Alt-Bega, *l*	Nagy-Beeskerek, *Halzfeld*.
Maros, *l*	Szegedin, Mako, Arad, *Lippa*, *Czanad*, Karlsburg, Maros-Vazarhely, *Szasz-Regen*, *Gergyos*.
Great Kokel, *l*	*Medias*, *Segesvar*.
Aranyos,	*Thorda*.
Körös, *l*	Szarvas, Bekes, Czaba, Gyula.
Berettyo,	Mezo-Tur, Kardzag.
Sebes-Körös,	Böszörmeny, Grosswardein.
Zagyva,	Gyongyos, n.

Basins inclined to the Black Sea (continued).

Rivers.	*Towns.*
Erlau,	Erlau.
Koselo,	Debreczin, Szoboszlo.
Hernad,	Kaschau, *Iglo, Leutschau.*
Sajo,	Miskoltz, *Rosenau, Schmölnitz.*
Tarcza, *l*	*Eperies.*
Bodrog,	*Bodrog, Ujhely,* n., *Munkacs,* n.
Ungh,	*Unghvar.*
Szamos, *l*	Szathmary, *Dees,* KLAUSENBURG.
Kraszna, *l*	Nagy-Karoly.
Lapos,	Nagy-Bany.
Lake Szamos,	*Bistritz,* n. (on the Bistritz).
Drave,	Essek, *Warasdin, Marburg, Bleibach.*
Mur, *l*	GRÄTZ.
Glan,	Klagenfürt.
Sarvitz,	Baja, *Szexard,* Stühlweissenburg.
Kapos,	Keszthely, n. (on the Sio).
Sed,	Veszprim.
Gran, *l*	Gran, Schemnitz, n., *Kremnitz,* n., Neusohl.
Waag, *l*	Komorn, *Tyrnau.*
Raab,	Raab, Papa, n.
Leitha, *l*	Wiener-Neustadt.
Torna,	Vasarhely-Somlo.
Raabnitz,	Oedenburg, n. (on L. Neusiedler).
Guns, *l*	*Guns.*
March or Morava, *l*	Presburg, Olmütz, Sternberg, n.
Thaya,	*Nikolsburg,* n., *Znaym.*
Schwartza, *l*	BRÜNN.
Iglawa,	Iglau.
Littawa, *l*	*Austerlitz.*
Miava, *l*	*Miava.*
Rumza,	Prossnitz.
Trasen,	*St Polten.*
Enns,	Steyer.
Traun,	Linz, *Wels.*
Inn,	Passau, *Hall,* INNSBRÜCK.
Salzach,	Salzburg, *Hallein.*
Isar,	Landshut, *Freising,* MUNICH.
Naab, *l*	Amberg, n. (on the Vils).
Alt Mühl,	*Eichstadt.*
Lech,	Augsburg.
Wornitz, *l*	*Dinkelsbühl.*
Eger,	Nordlingen.
Iller,	Ulm, *Kempten.*
Aach,	*Memmingen.*

Basins inclined to the Adriatic.

Isonzo,	See under "Italy."
Gulf of Trieste,	Trieste, *Capo d'Istria, Pirano.*
W. co. of Istria,	Rovigno, *Pola.*
Gulf of Fiume,	Fiume.

Basins inclined to the Adriatic (continued).

Rivers.	*Towns.*
Morlacca Channel,	*Zeng*, *Karlopago.*
Co. of Dalmatia,	ZARA, *Sebenico,* Spalatro.
Narenta,	*Opus, Gabella,* MOSTAR.
Brigava, *l*	*Stolacz.*
Bistritza,	*Imoschi,* n., *Livno.*
Tribinschucza,	Trebigno.
W. co. of Dalmatia,	Ragusa, *Castelnuovo, Cattaro, Antivari* — (see under "Turkey.")

14. **Lakes.**—In the basin of the Danube are *Balaton* or *Platten See, Neusiedler See*, and *Lake Palitz*, all in the west of Hungary ;* *Traun See* and *Atter See* in Salzburg. The Isonzo drains *Lake Zirknitz* in Carniola. Far more celebrated, however, are those that are situated in the basin of the Po—viz., *Garda*, drained by the Mincio ; *Iseo*, by the Oglio ; *Como*, by the Adda ; and *Maggiore* and *Lugano* by the Ticino and Tresa respectively.

15. **Climate.**—The climate differs very greatly in the different provinces ; but the entire empire is comprised between the isotherms of 50° and 60° Fahr. The mean annual temperature of Vienna, in the centre of the Austrian dominions, is 51°.3, winter 32°.9, and summer 69°.4.

German writers divide the empire into three zones—a northern, middle, and southern. The first, which embraces Bohemia, Moravia, Silesia, with the higher parts of Hungary and Galicia—in all, about 70,000 square miles—greatly resembles in its average temperature the British Isles and Northern France ; wheat, barley, oats, and rye forming the usual crops. This may be called the *zone of grain, hops, and hemp.* The central zone, extending from lat. 49° to 46°, is the zone of *maize, wheat, and the vine,* embracing an area of about 150,000 square miles ; while the third or southern zone, embracing the part of the empire south of 46°, is that of the *olive, myrtle, and rice.* The climate of Venice is peculiarly mild and genial. Snow falls at Venice on five days of the year. In the Italian Alps, however, which form its northern frontier, occurs one of the rainiest localities in Europe. For two months together the rain sometimes never ceases, and not unfrequently it descends in torrents ; but in Vienna and the low-lying districts, 28 inches are a frequent average for the year.

16. **Geology.**—A full half of the empire is covered with tertiary and post-tertiary accumulations, which prevail especially in the basin of the Danube, between the Save and the Carpathian Moun-

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* The Hungarian lakes occur in low swampy plains, and are shallow and uninteresting. Those of Salzburg are very small. Zirknitz is remarkable for the periodic disappearance of its waters through apertures in the bottom ; in winter it abounds with fish, but in summer its bed is dry and regularly cultivated. The Italian lakes are deep reservoirs in the bosom of the mountains, and present the most picturesque scenery—Maggiore being reckoned the most beautiful, and Como the most sublime.

tains and in the Italian province. Secondary strata occupy extensive areas in the Carnic and Julian Alps, in the Carpathians, in the greater part of Dalmatia, Croatia, and Illyria; together with a large belt in the N.W., extending from Vienna to Lake Constance. The Palæozoic series are principally confined to the W. of Bohemia, the N. of Moravia, Central Silesia, parts of Tyrol, Upper Austria, and Styria, extending in a long belt from Innsbrück to Neustadt, and in detached patches in Illyria and Croatia. Crystalline rocks prevail in the eastern Carpathians, and occupy a large portion of the surface of the north-western provinces, especially between Regensburg and Linz on the Danube, to Brünn on the Schwartza. Igneous rocks line the southern flank of the Carpathians, and occur also in Transylvania; and Granitic rocks are common in the S.E. of Bohemia and the N. of Upper Austria.

Minerals.—No country in Europe excels Austria in regard to mineral wealth. Almost every valuable kind of mineral is found in inexhaustible quantities. The precious metals are very abundant in Hungary, Transylvania, and Bohemia; the most celebrated mines being those of Schemnitz and Kremnitz in North-Western Hungary. Coal, iron, and copper, are abundant in all the provinces. Native steel, more valuable than that made by artificial means, is found in Styria, Carinthia, and Carniola. Tin, so rare in most countries, abounds in Bohemia. A very valuable mine of quicksilver, second only to that of Almaden in Spain, is worked at Idria in Carniola. Lead is found in Carinthia, antimony in Hungary, sulphur and arsenic at Schemnitz. Salt, building-stones of every variety, and precious stones, are widely diffused; and thermal and mineral springs are numerous—the most celebrated being those of Karlsbad, Töplitz, Eger, Sedlitz, and Marienbad in Bohemia, and of Baden in Lower Austria.

17. **Botany.**—The portion of Austria situated N. of lat. 46° is embraced within Schouw's second botanical region, or the *region of the Umbelliferæ;* the remainder, consisting of Venice, Dalmatia, Croatia, &c., is included within the third or *Mediterranean region* of that naturalist; while the higher elevations of both pertain to his *Arctic-Alpine region*—(see under "Europe," par. 19). The total number of indigenous plants in the empire has not been ascertained; but in the Italian province alone 2568 flowering-plants are enumerated, of which 514 are monocotyledons, and 2054 dicotyledons: while the whole of Germany, using the term in its widest acceptation, is said to contain 7000 species, of which 2566 are flowering-plants, subdivided into 529 monocotyledons and 2037 dicotyledons. The vegetation of the empire is therefore very extensive and varied, that of Hungary alone embracing nearly all the plants indigenous to Europe, with many others that have been imported. About a fourth part of the entire surface is covered with forests. The Alps and Sudetic Mountains produce the pine, birch, and larch; the Carpathians, firs, pines, and beeches; while the magnificent forests of the Hungarian and Polish provinces consist for the most part of the oak, beech, and elm. The trees attain in many places a gigantic size; and the timber, which is of excellent quality, and well adapted for house and ship building, is largely exported.

Agriculture.—Though the soil is characterised by great diversity, it is for the most part highly fertile; and notwithstanding the antiquated and unskilful methods employed in husbandry, the crops are rich and abundant. In the vicinity of the large rivers the soil consists of a black vegetable mould, which is admirably suited for the growth of wheat. In some parts of Hungary no manure is required for the production of the choicest crops. It is estimated that about one-third of the whole surface is under tillage. In the northern provinces, the usual cereals raised are wheat, rye, oats, and barley; in the central provinces, maize and wheat; while in the southern are maize and rice. Hungary and Galicia are the principal corn-growing provinces, and rye forms everywhere the chief food of the people. Vines, hops, tobacco, saffron, flax, hemp, and a great variety of fruit trees, are also cultivated; and mulberry trees, for silk-worms, are extensively reared in the Italian province and in Hungary. Vineyards occupy about half a million acres of the surface, and yield between three and four million gallons annually. The parts of the country best adapted for the culture of the vine are Styria, Lower Austria, and the N.E. of Hungary; but the wines are of inferior quality, except those produced in the upper basin of the Theiss, especially those of Tokay, which have been long celebrated for their excellence. The vine cannot be cultivated at a higher elevation than 1750 feet: the oak extends to the height of 3000 feet, the cereals generally to 4500 feet, pines to 6000 feet, and pasture to the limit of perpetual congelation, which in the Alps is at a height of 8900 feet. Pasture-lands are limited in extent, save in the Alpine provinces and Moravia, where cattle are numerous and the produce of the dairy considerable. In Hungary and Galicia great attention is paid to the rearing of sheep; great quantities of wool are exported from the Buckowina; and goats, swine, and poultry from most of the provinces.

18. **Zoology.**—The fauna of Austria is, in general, the same as that of Germany, and the remainder is common to Italy and European Turkey. Of the 78 species of mammalia inhabiting Central Europe, 41 are carnivora, 22 rodentia, 9 ruminantia, and 1 pachyderm. The following are the principal species — the bear, wolf, fox, lynx, and chamois in the Alps and Carpathians; the marten, otter, marmot, beaver, wild-boar, wild-cat, jackal, stag, deer, hare, and rabbit, in Dalmatia. Of the 305 species of birds belonging to the same zoological province, the eagle, vulture, hawk, and other birds of prey, are common in the mountains; and the pheasant, wild-duck, white heron, and game of all kinds, in the plains. Among the 31 reptiles the most remarkable is the *Proteus anguineus*, an animal resembling the water-lizard, found in Lake Zirknitz in Carniola. Fishes are abundant in most of the rivers, especially in the Theiss and Lower Danube, where the sturgeon and pike attain to a vast size. The fresh-water fishes of Carniola alone amount, according to Freyer, to 32 species. The marine species, which include the mackerel, tunny, and anchovy, are embraced within Forbes's *Mediterranean Region of Marine Life*, which also embraces the Black Sea. A pearl-bearing mollusc inhabits the waters of Hungary, Bohemia, and the Archduchy of Austria, and a regular pearl-fishery is established on the Vatava. Insects are abundant in the low marshy grounds of Hungary, especially gnats and flies;

bees, Spanish flies, and the cochineal insect, are reared in great numbers; leeches are numerous in the Neusiedler See, and are largely exported for medicinal purposes; and corals are collected on the coast of Dalmatia.

19. **Ethnography.**—The people of Austria comprise four great races, which, according to the census of 1851, existed in the following proportions,—viz., Sclavonians, 14,802,751; Roumans (including Italians and Wallachians), 8,051,906; Germans, 7,870,719; Magyars, 4,866,556; Jews, Gypsies, and other races, 817,712;—total, 36,401,864. The Sclavonians form the majority in Bohemia, Moravia, Silesia, Illyria, Dalmatia, and Hungary, and constitute almost the entire population of Galicia. The Roumans, or people speaking Romannic languages, form nearly the entire population of Venice, the southern part of Tyrol and the maritime districts of Illyria and Dalmatia. The Germans predominate in Styria and the Tyrol, and are almost the sole inhabitants of Upper Austria, Lower Austria, and Salzburg. The Magyars are the dominant race in Hungary and Transylvania. The Jews, who amount to 706,657, are most numerous in the towns of Galicia, Bohemia, Moravia, and Hungary; and the Gypsies, Armenians, and Greeks are scattered over all the eastern provinces of the empire.

Language.—The languages spoken in this extensive empire belong to four distinct families—viz., the Sclavonic, Teutonic, Greco-Latin, and Finno-Tartarian. To the first belong the *Russniak*, spoken by the Sclavonian population of Galicia and Hungary; the *Servian*, in parts of Dalmatia, Sclavonia, and Military Croatia, where it forms the vernacular of about 1,300,000; the *Bohemian* or *Tchekhian*,* spoken by from 3,000,000 to 4,000,000 of the population of Bohemia and Moravia; the *Slowak* or *Slovakian*, by about 1,800,000 in the N.W. of Hungary. The Slowaks are descendants of the original Sclavonic settlers in Hungary, who in 894 were conquered by the Magyars; but though a subjugated race, they still retain their original language, as a remnant of their ancient national existence. The second or Teutonic family of languages is represented by the *German*, which is the language of the Court and of literature, and is spoken by nearly 8,000,000 of the population, who reside for the most part in the nine German provinces and especially in the Archduchy of Austria, Salzburg, Styria, and the Tyrol. — (See under "Germany," where the literature will also be found.) The Greco-Latin family is mainly confined to the coasts of the Adriatic, and is represented by three languages —viz., the *Italian* in Venetia and the south of the Tyrol, embracing a population of upwards of 2,500,000; the *Wallachian*, or *Daco-Romana*, in the south of Transylvania, into which it has spread from the Turkish provinces of Wallachia and Moldavia; and the *Albanian* or *Arnaute*, the remains of a language long extinct, and which formed an intermediate link between several distinct families in the southern parts of Dalmatia. The Arnauts differ in language and physical conformation from all the other nations of Europe, and are supposed to be descended from the ancient Illyrians. The Finno-Tartarian family is represented by the *Magyar* or *Hungarian*, which is spoken by 4,800,000 of the population of Hungary—the remainder consisting of Slowaks, Croatians, Germans, Russniaks, Wallachians, and Jews. The Magyars are a people of Finnish extraction, and closely allied to the Ostiaks and Woguls, barbarous hordes who lead a wandering life in the upper and central basin of the Obi. They entered Europe in the ninth century, and subdued Hungary in the short space of ten years; and though then differing in few or no respects from the other savage tribes of Central Asia, they now take rank among the foremost nations of Europe in physical, moral, and intellectual qualities. Their language has experienced a similar transmutation, from its long-continued contact with European civilisation; but it still retains those well-marked features which have always characterised the Finnish branch of the linguistic family to which it belongs. For example, the Magyar resolves its vowels into two classes, one of which (a, o, u) denotes the masculine, and the other (e, i, ö, ü) the feminine; and the individual words of the language are so formed that a masculine and a feminine vowel are never allowed to meet in the same vocable, whether simple or compound. This curious characteristic of the Finnish dialects strongly reminds the Celtic scholar of the well-known principle, *leathan ri leathan is caol ri caol;* or "broad to broad, and small to small."

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* During the last century an attempt was made by the Austrian Government to abolish the Bohemian language, and German teachers were introduced into all the schools of Bohemia; but a language which, during the long ages of Papal superstition, had been used as almost the only organ of truth, was not permitted to be thus suppressed. A reaction took place in its favour, and of late years Bohemian literature has been sedulously cultivated. Bohemia, though justly styled the cradle of the Reformation, is now one of the strongholds of Roman Catholicism; and the descendants of those who shed their blood in defence of religious liberty are now distinguished by the superstitious zeal with which they adhere to the form of religion forced on them by the swords of the Austrians.

Religion.—According to the "Almanach de Gotha" for 1859, the different religious persuasions in the empire contained the following numbers in 1851: Roman Catholics, 25,509,626; Greek Catholics, 6,257,514; Protestants (chiefly Reformed), 3,083,443; Jews, 729,005; Unitarians and other sects, 46,733. The Protestants are chiefly found in the Hungarian provinces; about half the Magyars are Calvinists, and a large proportion of the remainder Lutherans, who are also numerous in the German provinces. The adherents of the Greek Church are most numerous in Galicia, where they amount to upwards of 2,000,000; but they are found in considerable numbers in all the eastern provinces.

Education.—In regard to education Austria occupies the seventh place among European states, having more of the population at school than France or the United Kingdom, but less than Belgium, Sweden, or Prussia. About one-eleventh of the entire population, or 72 per cent of those between seven and fourteen years of age, are regularly attending some place of instruction. In 1859 the different seminaries, teachers, and pupils, stood as follows:—

EDUCATIONAL INSTITUTIONS.	Number.	Professors or Teachers.	Pupils.
Common or Elementary Schools,	44,669	57,987	3,435,978
Gymnasia and Academies,.........	787	10,925	95,940
Theological Seminaries, ...	139	602	4,975
Universities, ...	9	575	8,667
Total, ...	45,604	70,089	3,545,560

The nine universities are those of Vienna, Prague, Grätz, Olmütz, Innsbrück, Lemberg, Pesth, Padua, and Pavia. The university of Vienna was founded in 1365; that of Prague is the oldest in Germany, having been founded in 1348 on the model of the University of Paris. It flourished so much that in 1409 it numbered 20,000 students. The celebrated University of Padua, founded in the thirteenth century, had in former times students from every part of Europe, among whom were Tasso and Columbus. The instruction given in all the public establishments is gratuitous, but it is customary to pay a small fee, which goes to the maintenance of poor students. Attendance at school is not strictly compulsory; but the law requires that every child between the ages of six and twelve shall be educated either in school or at home.

20. **Government, &c.**—The form of government is an hereditary and almost absolute monarchy; and with the exception, perhaps, of Naples and one or two other Italian States, there is not a government in Europe under which the subject enjoys a smaller amount of real liberty. Each of the provinces enjoys, indeed, the privilege of a legislative diet, or local parliament, but in every instance its power is merely nominal, and the will of the Emperor is everywhere supreme.

The revolutionary movement which, in 1848, shook the thrones of so many European monarchs, compelled Francis Joseph to grant liberal constitutions to several of the nations under his sway; but no sooner had the danger passed away than a reaction followed, and the various nationalities of the empire are now groaning under a more intense despotism than before. Hungary, in particular, which for many centuries preserved a large measure of independence, was deprived of the last vestige of her liberty in 1849, though only by the intervention of Russia. The Italian provinces have been ripening for insurrection these many years, but the favourable opportunity was wanting till 1859, when Napoleon III., envious of the all-engrossing power of Austria in Italian affairs, and professing an ardent desire for the liberation of the peninsula, sent an immense army to aid the King of Sardinia, whose territory the Austrian forces had invaded. After several engagements that led to no decisive result, the campaign was terminated by the sanguinary battle of Solferino, which drove the Austrians out of Lombardy, and led to the transference of Lombardy to Sardinia. The strong fortresses of Mantua and Peschiera were, however, excepted from this transference, and Venice is still biting her chains.

Army and Navy.—The permanent military force, or regular peace establishment, amounts to 400,000 men, but the war establishment, in 1858-9, was nearly double that number. The whole naval force does not exceed 135 vessels, including 1 ship of the line, 7 frigates, 7 corvettes, 9 brigs, 13 war-steamers, and 98 smaller vessels—carrying, in the aggregate, 852 guns, and 8707 marines. The total cost of the Army and Navy in 1858 amounted to £10,689,000. There are a great many fortifications in the empire, of which Josephstadt, Theresienstadt, Olmütz, Mantua, Peschiera, and Komorn, belong to the first class; and Peterwardein, Brod, Old Gradisca, Arad, Eszeg, Karlstadt, Karlsburg, Munkacs, Temeswar, Ragusa, Cattaro, Zara, Legnago, Venice, Kufstein, Salzburg, Prague, and Königgrätz, to the second. Austria has also garrisons in Mentz, Piacenza, Ferrara, and Comacchio.

The *Revenue* in 1857 amounted to £29,829,000, and the *Expenditure* to £34,083,000. About a third of the entire revenue is derived from direct taxes on land, houses, industry, and income; and the remainder from indirect imposts—the chief items being customs, and the duties on salt, timber, and tobacco.

The *Public Debt* is advancing at a rate which threatens national bankruptcy. In 1846 it was only £103,000,000; in 1854, £162,376,000; and in 1856, £241,700,000. The interest on this debt absorbs a full third of the entire revenue.

21. **Commerce.**—The foreign commerce of the empire is comparatively trifling, and is confined to Trieste, Venice, Fiume, and Chioggia, all situated on the Adriatic.

In 1857 the *Mercantile Marine* consisted of 9651 ships, carrying 376,000 tons. Of these upwards of 600 are of large size, handsomely and strongly built. The *Imports* were valued at £28,193,000, and the *Exports* at £23,100,000. The number of vessels that entered the port of *Trieste* was 10,733, carrying 747,000 tons; cleared 10,771 ships, with a tonnage of 773,000. Entered *Venice* 4645 ships, tonnage 465,000; left 4536 ships, tonnage 473,000. The principal imports are articles of colonial produce—such as coffee, sugar, &c., together with oils, corn, cattle, cotton and cotton yarn, hides, skins, and metals; and the chief exports are wool, silk, woollen goods, linen, hemp, linen yarn, printed cotton goods, glass, timber, salt, wine, jewellery, watches, and musical instruments.

22. **Manufactures** have made considerable progress since the peace of 1815. They are prosecuted chiefly in the German provinces. The manu-

facture of silk fabrics is almost confined to Vienna, Prague, and Pesth; of woollen goods to Bohemia and Moravia; of cotton goods to Bohemia and Lower Austria; but linen goods are manufactured in all the provinces, and give employment to about a tenth part of the population. Wooden articles are executed with much ingenuity in the Tyrol; Bohemia has long been celebrated for glass; and Vienna, Venice, and Prague are noted for jewellery and watches. Mining forms an important branch of industry in Hungary, Bohemia, and the mountainous parts of Upper Austria, Styria, and Carinthia.

23. **Internal Communication.**—The Danube with its navigable tributaries the Theiss, Save, and Drave, are the great commercial thoroughfares of the empire. The current of the main river is so rapid that steamers alone are now employed. Steamers are also extensively used on the other navigable rivers and on the lakes of Lombardy. The total extent of river navigation in the empire is estimated at 4300 miles. There are few *Canals*, except in Lombardy and lower Hungary.

RAILWAYS have made great progress, and connect the capital with the most distant points of the empire. In 1859 no fewer than 2086 miles were open for traffic, embracing the following principal lines:—

Vienna to Brünn, Olmütz, and Prague; and thence to Dresden and Berlin.

Vienna to Troppau, Cracow, and Lemberg.

Vienna to Presburg, Pesth, Szegedin, and Temeswar; with a branch from Czegled to Grosswardein and Debreczin.

Vienna to Raab, Komorn, Stühlweissenburg, and Warasdin.

Vienna to Grätz, Cilly, Laybach, and Trieste; with branches from Cilly to Agram, Karlstadt, and Petrinia.

Vienna to Linz and thence to Passau, Salzburg, and Innsbrück, with a branch from Linz to Gmunden.

Venice to Treviso, Udine, and Trieste.

Venice to Padua, Verona, Brescia, Bergamo, Milan; and thence to Turin. This line has three branches—one from Milan to Como, a second from Verona to Mantua and Modena, and a third from Verona to Botzen in the Tyrol.

Excellent *carriage-roads* have also been constructed at great expense between all the leading cities of the empire. That from Pavia in Italy to Czernowitz in Galicia, 1120 miles in length, is carried across rivers and mountain-chains, and is macadamised throughout. Similar roads connect the capital with Prague, Buda, Trieste, and Milan. Upwards of sixty *mountain-passes* have been rendered practicable for wheeled carriages, at an enormous expense. The principal of these are enumerated elsewhere (see under "Mountains," par. 11), and need not here be repeated.

SWITZERLAND.

1. **Position and Boundaries.** — N., Lake Constance and Grand-duchy of Baden; W., France; S., Sardinia; E., Tyrol and Liechtenstein. Lat. 45° 50′—47° 50′ N.; lon. 5° 55′—10° 30′ E. Bern, the nominal capital, is nearly on the same parallel with Nevers, Grätz, Jassy, Azov, and Astrakhan; and nearly on the same meridian as the Naze, Münster, Strasbourg, and Turin.

2 **Form and Dimensions.**—Form elliptical; greatest length from E. to W., 216 miles; extreme breadth, 140 miles.

3. **Surface.**—More mountainous than any other country in Europe; two-thirds of the surface occupied with lofty mountain-chains (see par. 8); and the remaining third consisting of an elevated plateau, about 1300 feet above the level of the sea, and studded with many beautiful lakes (see par. 13).

4. **Area**: 15,261 square miles, being somewhat less than the half of Scotland.

5. **Population**: 2,392,740 in 1851; or 156 inhabitants to each square mile. It has increased 10 per cent since 1838, when the population was 2,184,096. Bern is by far the most populous canton, containing about one-fifth of the entire population, and Uri is the least populous.

6. **Political Divisions.**—The Swiss Confederation comprises twenty-two cantons, which now form twenty-five distinct republics, united by a federal council. The three divided cantons are Basle, Appenzell, and Unterwalden. There are seven western cantons; twelve north-eastern, including the four forest cantons of Schwytz, Lucern, Unterwalden, and Uri; and three southern cantons.

SEVEN WESTERN CANTONS.

Geneva.—GENEVA 37 (Rhone), Carouge 5 (Arve).

Vaud.—LAUSANNE 17, Vevey 5 (Lake of Geneva).

Fribourg.—FRIBOURG 9 (Sarine), *Morat* (Lake Morat).

Neuchâtel. — NEUCHÂTEL 8, Vallengin 6 n. (Lake Neuchâtel), Chaux-de-Fonds 8 n., Locle 8 n. (Doubs).

Bern.—BERN 26, Thun 5 (Aar), Bienne 5 (Lake Bienne), Langnau 5 (Emmen), *Laupen*.

Soleure.—SOLEURE 5, Olten 2 (Aar).

Basle.—BASLE or BALE 22, capital of Bâle-Ville (Rhine); Liesthal 3, capital of Bâle-Campagne (Ergolz).

TWELVE NORTH-EASTERN CANTONS.

Aargau.—AARAU 5 (Aar), Baden 3 (Limmat).

Zurich.—ZURICH 15, Wadenschwyl 5 (Limmat), Winterthur 5 (Toess).

Schaffhausen.—SCHAFFHAUSEN 8 (Rhine).

Thurgau.—FRAUENFELD 3 (Murg).

St Gall.—ST GALL 11 (Steinach), *Sargaus*, *Pfeffers* (Rhine).

Appenzell.—APPENZELL 3, capital of Inner Rhodes, Herisau 4 n. (Sittern); Trogen 3, capital of Outer Rhodes (Goldach).

Glarus.—GLARUS 5 (Linth), *Näfels.*

Schwytz.—SCHWYTZ 5 (Muota), *Morgarten.*

Zug.—ZUG 3 (Lorze).

Lucern.—LUCERN 10 (Reuss), *Sempach.*

Unterwalden.—STANZ 2, capital of Nidwald (Engelberg Aa); Sarnen 3, capital of Obdenwald (Sarner Aa).

Uri.—ALTORF 2 (Lake Lucern), *Bürglen.*

THREE SOUTHERN CANTONS.

Grisons.—COIRE or CHUR 5 (Rhine), *Bernhardin*, *Splügen.*

Ticino or **Tessin.**—BELLINZONA 2, Locarno 3 (Ticino), Lugano 5 (Lake Lugano).

Valais.—SION or SITTEN 3, Martigny, Leuk (Rhone).

7. **Descriptive Notes.**—The towns are remarkably few in proportion to the population; only thirty-five contain more than 5000 inhabitants; seven have 10,000; and only three exceed 20,000—viz. Geneva, Bern, and Bâle.

WESTERN CANTONS.—*Geneva,* finely situated on the Rhone, where it issues from the lake, is the largest city in Switzerland; noted for its manufacture of watches and jewellery; has a Protestant college, and contains the federal arsenal. The names of Calvin, Beza, Knox, Cranmer, Lesage, Deluc, Lefort, Rousseau, Necker, Saussure, and De Candolle adorn the annals of this famous city. *Lausanne,* on the Lake of Geneva, in the midst of enchanting scenery, has several manufactures, and numerous educational institutions. *Fribourg,* a busy manufacturing town on the Sarine. *Neuchâtel* or *Neufchâtel* (Ger. *Neuenburg*), on the lake of same name, is a place of great trade, especially in wine, corn, cattle, and watches; has a college, and a cathedral where the doctrines of the Reformation were preached as early as 1530. BERN, the seat of the federal diet, and therefore usually regarded as the capital of Switzerland, pleasantly situated on the Aar, and in population inferior only to Geneva; has a university, founded in 1834; a public library, containing numerous books and MSS. on Swiss history; numerous manufactures, especially of gunpowder, firearms, mathematical instruments, straw-hats, paper, and leather; the birthplace of Haller the poet. *Thun* (pronounced Toon), on the Aar, near where it issues from the lake, is renowned for its romantic situation. *Soleure*, a small town on the Aar, with a college, a public library, and botanic garden: here Kosciusko died in 1817. *Basle* or *Bâle* (Ger. *Basel*), a celebrated and ancient city on the Rhine, near its great bend. It dates from the fourth century, and in the eleventh was the most powerful city in Helvetia; it was the seat of a great council (1431-1437), and of a memorable treaty between France and Prussia in 1795: it is now the third city in the confederation in point of population; contains a university, and numerous manufactures of silk ribbons: the birthplace of Euler and Bernouilli, the celebrated algebraists, and of the two Holbeins: here also Erasmus died in 1536.

NORTH-EAST CANTONS.—*Aarau*, a small manufacturing town on the Aar. *Zurich*, a considerable town on the Limmat, near its efflux from the lake, contains a university which is attended by about 200 students; has important manufactures of silk and cotton fabrics: here Zuingle preached, and here the first entire English version of the Scriptures (Coverdale's) was printed in 1535: it is the birthplace of Gessner, Lavater, and Pestalozzi. *Schaffhausen*, on the Rhine, near its picturesque falls, has a college, and several manufactures. *Frauenfeld*, a small town on the Murg, with cotton-mills and dye-works. *St Gall* has extensive manufactures of cotton, yarn, and muslins. *Appenzell*, capital of Inner Rhodes, and *Herisau*, on the Sittern, have extensive manufactures of muslin and of silk and cotton fabrics. *Trogen*, capital of Outer Rhodes. *Glarus* exports cheese in great quantities, and has manufactures of cloth and cotton. *Lucern*, on the Reuss, near its efflux from the lake of same name, celebrated for its beautiful scenery; has a lyceum with fourteen professors. *Altorf*, famous for the resistance of William Tell to the tyrant Gessler in 1307: Tell was born in the vicinity.

SOUTHERN CANTONS.—*Coire* (Fr. *Chur*), in the valley of the Upper Rhine, has an active transit-trade and some manufactures. *Bellinzona* has an active transit-trade between Switzerland and Italy. *Sion* (Ger. *Sitten*), pleasantly situated near the right bank of the Rhone, has an arsenal and two ruined castles.

8. **Mountains.** — Switzerland is by far the most mountainous country in Europe, and the one which contains the grandest scenery. The Pennine and Helvetian Alps, in the S., separate it from Piedmont and Lombardy; the Bernese Alps, in the interior, stretch between Bern and Valais; and the Jura chain, in the W., lies along the French frontier. Between the two last-mentioned chains an elevated plateau, 135 miles long by about 50 miles broad, extends from the Lake of Geneva to that of Constance.—(See under "Italy".)

PENNINE ALPS, in the S.W., between Canton Valais and Sardinia, separate the basins of the Rhone and Po, and contain Mont Blanc, the culminating-point of the Alps. Among the loftiest summits are:—

	Feet.
Mont Blanc, in Savoy,	15,744
Great St Bernard,	11,080
Mont Cervin,	14,771
Monte Rosa (culminating point of Switzerland),	15,208

HELVETIAN or LEPONTINE ALPS, partly between Valais and Ticino, separate the head-waters of the Po, Rhone, and Rhine :—

	Feet.
The Simplon, in the E. of Valais,	11,510
Mont Furca,	8,268
Mont St Gothard,	10,900

BERNESE ALPS, between Bern and Valais, and between the Upper Rhone and Aar, are separated from the Helvetian Alps by the valley of the Rhone :—

	Feet.
Oldenhorn,	10,200
Altels,	12,000
Jungfrau,	13,718
Schreckhorn,	13,386
Finster-aar-horn,	14,026
The Grimsel,	9,700
Height of snow-line in the Swiss Alps,	8,900

JURA CHAIN, between Switzerland and France, separates the basins of the Aar and Doubs :—

	Feet.
Mont Molleson (in France),	6,588
La Dole, N. of Geneva,	5,500
Mont Tendre, in Canton Vaud,	5,538
Chasseron,	5,284

MOUNTAIN-PASSES.—The following are some of the most celebrated passes among the Swiss Alps, arranged in the same order as the mountain-chains :—

1. *Pass of Great St Bernard,* 8150 feet high, leads through the Pennine Alps from Aosta, in Piedmont, to Martigny in the Valais ; traversed by Napoleon with his army in 1800 : the Hospice, erected at its highest point, is the most celebrated institution of the kind in all the Alps. 2. The *Cervin Pass,* 10,938 feet high—the loftiest in Europe—leads from Chatillon, on the Dora-Baltea, to Visp, in Canton Valais. 3. The *Simplon Pass,* 6592 feet high, leads from Milan and Domodossola to Canton Valais : it is a great work, executed by Napoleon at prodigious labour and expense ; is 38 miles long, 30 feet wide, passes over 611 bridges, and through several extensive tunnels. 4. *Pass of St Gothard,* 6976 feet high, from Bellinzona on the Ticino, to Altorf on the Reuss : it is the only road carried over the crest of the mountains, all the others being conducted through deep gorges and beds of mountain-torrents. It is now a good carriage-way, and has long been a line of great commercial importance. 5. *Pass of Bernhardin,* 6970 feet high, from Bellinzona to Chur, one of the principal routes of commerce between Italy, Switzerland, and Germany. 6. The *Splügen Pass,* 6939 feet high, from Chiavenna in Lombardy to the Grisons, was passed by a French army in 1800, but greatly improved by the Austrian government in 1823, and carried through three covered galleries, which are the longest in the Alps. It has now nearly superseded the *Septimer Pass,* 7611 feet high, which

was formerly the ordinary route from Eastern Switzerland into Italy. 7. The *Gemmi Pass*, through the Bernese Alps, 7595 feet high, leading from Canton-Bern to Valais, about 24 miles south of Thun. 8. The *Grimsel Pass*, 7126 feet high, through the same chain, at the southern extremity of the Hasli Valley. For the remaining passes across the Alps, see under "Italy" and "Austria."

9. **Glaciers, &c.**—The glaciers of the Swiss and Italian Alps are among the grandest and most remarkable phenomena in nature. They consist of huge masses of ice, or of snow that has been partially melted by the heat of summer, but which has afterwards been congealed, and which, quitting the higher level, descend far below the usual snow-limit, into the region of cultivation.

This descent is owing to the inclination of the bed, the annual accumulation of snow during winter in the higher levels, the viscous or semi-fluid character of its structure, and other causes. The rate of motion in the descent is different in different glaciers, according as the elements just specified vary, and it is *continuous*, though not *uniform*, in all, never being wholly arrested, even during the most severe winters. The velocity increases with the slope, and the surface and the central parts move faster than the centre and sides. One celebrated glacier (Mer de Glace) moves down the sides of Mont Blanc in summer and autumn at the rate of four feet per day in some parts of its course, while in others it does not exceed eight or nine inches per day.

The total number of glaciers in the Alps is estimated at 400, covering an area of 1440 square miles, and forming the sources of several of the largest rivers in Europe, as well as of their principal affluents. Thus, the Rhine and Rhone originate in glaciers of that name on the opposite sides of Mont St Gothard; and many of the head-waters of the Rhine, Rhone, Po, and Danube find in the glaciers a never-failing supply of water. The principal region of the true glaciers extends from Mont Pelvoux, in Dauphiné, to the Gross Glockner, in the Rhætian Alps, east of which very few occur. Two groups of glaciers are particularly celebrated—one in the Pennine and the other in the Bernese Alps, or Oberland. The first is the GROUP OF MONT BLANC, consisting of thirty-four enormous glaciers, some of which are 20 miles long by 2 broad. It includes the *Mer de Glace*, covering an area of 18 square miles, one of the largest glaciers in the Alps, which forms the source of the river Arveiron, about 2 miles above the village Chamouni; and the *Glacier de la Brenva*, near Courmayeur, one of the most beautiful and most accessible of all known glaciers. The other is the GROUP OF THE OBERLAND, in the Bernese Alps, greatly more extensive than the former. It includes the *Great Aletsch Glacier*, which has an area of 32 square miles, and which is fed by the snows of Mont Aletsch; and the *Glacier of the Lower Aar*, which has been described and repeatedly visited by the celebrated Swiss naturalist, M. Agassiz.

Avalanches are the most dangerous and terrible phenomena to which the Alpine valleys are exposed. They originate in the higher regions of the mountains, when the accumulation of snow becomes so great that the inclined plane on which the mass rests cannot any longer support it; it then rolls down the declivity by its own weight, acquiring, at every successive leap, both greater dimensions and increased speed, till, arriving at the lower valleys, it covers, destroys, or carries away everything that opposes its course—trees, forests, houses, rocks, and even entire villages.

In the year 1749 the whole village of Rueras, in Canton Grisons, was covered, and removed from its site by an avalanche of this description, in which many persons perished.

Waterfalls.—Among the most celebrated waterfalls in Switzerland may be enumerated the following: *Fall of Lausen*, near Shaffhausen, on the Rhine; it has a total descent of 100 feet, and forms one of the most imposing phenomena of the kind in Europe. The *Staub-bach*, in the Lauterbrunnen, Canton-Bern, on the White Lutchine, an affluent of the Aar. This is one of the highest falls in Europe: the river projects itself over a precipice from 800 to 900 feet high. *Fall of Handek*, on the Aar, near the Grimsel glacier. *Fall of Giessbach*, also on the Aar, near Lake Brienz. *Fall of Reichenbach* (a tributary of the Aar), near Meyringen, in the Hasli Valley, and in the S.E. of Canton Bern. *Fall of Tosa*, on the river Toccia, in the Val Formazzo, above Domodossola, noted for its great volume of water. *Fall of Sallenche*, on the Pissevach an affluent of the Rhone, in Canton Valais, and 10 miles S.W. of Martigny.

Mineral Springs and Baths.—Switzerland contains upwards of 300 mineral springs; 18 bath establishments of the first, and 186 of the second class. Among the most frequented baths are those of Schinznach or Hapsburg on the Aar, and Baden on the Limmat, both in Canton Aargau; of Gurnighel, near Bern; of Leuk, in the Valais; of Lavez, in the Canton de Vaud; Pfeffers, in St Gall; St Moritz, in the Upper Engadine; Grisons, &c. The first mentioned is chiefly frequented by French visitors: the great bath-house contains 160 baths, 360 beds, and saloons in which 500 persons can dine together: the temperature of the waters is about 60° Fahr. Those of Baden are sulphureous, have a temperature of 117° Fahr., and are chiefly frequented by the Swiss. That of Leuk has a temperature of 144° Fahr.

10. **Places of Historical Interest.** — There are many such in Switzerland, but the following are especially famous:—

Morgarten, on the boundary between Schwytz and Zug, where, on the 15th November 1315, 1300 Swiss defeated an army of 20,000 men, under Leopold of Austria, this being the first battle fought for Swiss independence. In 1798 the Swiss also defeated a French force in the same place. *Tell's Platte*, by the lake of Lucern, where William Tell, the Wallace of Switzerland, escaped from the tyrant Gessler. *Sempach*, on the lake of that name, in Canton Lucern, where, on the 9th July 1386, 1400 Swiss routed 4000 Austrians: the action is rendered memorable by the heroic death of Arnold von Winkelreid, and is celebrated by an annual festival. *Burglen*, in Uri, where Tell was born; and *Altorf*, in the same canton, where he is said to have shot the apple off his son's head. *Morat*, in Fribourg, where the Swiss totally defeated the invading army of Charles the Bold, Duke of Burgundy, 22d June 1476. *Laupen*, Canton Bern, where the Swiss, under Rudolf of Erlach, totally defeated the Austrians, 21st June 1339. *Fraubrunnen*, near Bern, where Enguerrand de Coucy, a French noble, with an army of adventurers, was defeated by the Bernese in 1375. *Näfels*, where the Austrians, invading Glarus, were defeated in 1388. *Wildhausen*, in St Gall, where Zuinglius was born in 1484; and *Cappel*, in Zurich, where he was killed in a skirmish against the Papists, in 1531.

11. **Principal River-Basins.**—Switzerland comprises portions of four great river-basins—those of the Rhine, Rhone, Po,

and Danube. It is principally embraced, however, in the Rhine basin, which contains twenty-one capitals of independent states, while the Rhone basin contains three, and that of the Po only one. There is no capital on the basin of the Danube.

Basin.	Length in Eng. Miles.	Area in Sq. Miles.	Capitals.
Rhine, ...	600	65,000	Bâle, Schaffhausen, Chur, Liesthal, Aarau, Soleure, BERN, Zurich, Glarus, Lucern, Schwytz, Altorf, Zug, Sarnen, Stanz, Trogen, Neuchâtel, Fribourg, Frauenfeld, Appenzell, St Gall.
Rhone,...	534	28,160	Geneva, Lausanne, Sion.
Po, ...	340	...	Bellinzona.

For Tabular View of Rivers and Towns, see River System of Central Europe, under "Austria."

12. **Lakes.**—These are more numerous, in proportion to its size, than in any other European country, except Scandinavia and Finland. The two largest are the Lake of Geneva (area, 336 square miles) and the Lake of Constance (290 square miles).—They all belong to the same three river-basins as contain the 25 capitals: there are ten in the basin of the Rhine, viz., *Lake Constance*, or *Boden See*, in the N.E., drained by the main river; *Thun* and *Brienz*, by the Aar; *Zurich* and *Wallenstadt*, by the Limmat; *Zug* and *Lucern*, by the Reuss; *Bienne*, *Neuchâtel*, and *Morat*, by the Thiele: the *Lake of Geneva* is drained by the Rhone; and *Maggiore* and *Lugano* by the Ticino.

13. **Climate.**—Owing to the great elevation of the whole country, which is not less than 1300 feet, and the lofty ranges of mountains which cover the greater part of the surface, the climate of Switzerland is considerably more severe than its geographical situation would lead one to expect. Lying midway between the Pole and the Equator, and in the same latitude as the central parts of France, its climate is far more rigorous and variable, presenting in rapid succession the greatest extremes of temperature and the most violent contrasts of weather. In Geneva, at an elevation of 1230 feet above the sea, the thermometer ranges from 34° as the mean in January to 66° in July; the mean pressure of the barometer is 27 inches, and the annual fall of rain 29 inches; while on Mont St Bernard, which is 20 miles farther south, the thermometer ranges from 18° to 43° Fahr.: the mean height of the barometer is 21 inches, and the fall of rain 65 inches. At elevations of

more than 2000 feet, the climate is pure and healthy; but in the deep and narrow valleys it is usually insalubrious, and *goître*, or Derbyshire neck, is very prevalent. The vine grows in the valleys, and extends to an elevation of 1900 feet; while oranges, olives, and pomegranates come to maturity in the three southern cantons.—(See par. 16.)

14. **Geology.**—The Alpine region in the S. consists for the most part of crystalline rocks reposing on a granitic basis: a narrow belt of secondary strata extends N.E., from Martigny on the Rhone to Chur on the Rhine, in the line of the Bernese Alps; and another belt from Geneva to Basle, in the line of the Jura Mountains. The elevated plateau between the Bernese Alps and the Jura Chain consists of tertiary strata. Palæozoic rocks do not occur.

Minerals.—The mineral products are somewhat numerous, but not extensively wrought: iron, lead, zinc, and copper combined with silver are found in the Grisons, but the mines are now abandoned. Iron is worked with advantage in the Jura Mountains; coal on the southern shore of Lake Thun, and in other places; rock-salt in Vaud; saline and other mineral springs in numerous localities, as also sulphur, asphalt, gypsum, marble, alabaster, and limestone.

15. **Botany.**—The indigenous vegetation is peculiarly rich and varied. The characteristic floras of all countries, from the Mediterranean to the North Pole, are here found arranged in successive belts on the sides of the mountains, as we ascend from the deep sheltered valleys to the snow-clad summits. The following zones of vegetation are easily marked—(1.) The vine in the valleys ascending to an elevation of 1900 feet; (2.) The zone of walnuts and chestnuts to 3000 feet; (3.) Oak, 2600 feet; (4.) Beeches, 3200 feet; (5.) Birches, 4500; (6.) Pine forests, spruce, larch, Scotch fir, and dwarf pine, 6000 feet; (7.) Rhododendra, 6500 feet; (8.) Alpine herbs, 7500 feet; (9.) Mosses and lichens, extending to the region of perpetual snow, 8900 feet.

The *Agriculture* is well conducted, but the corn raised is not nearly sufficient for home consumption; the deficiency being supplied by importation, and by the extensive use of potatoes and dairy produce. The principal source of wealth is the rich and excellent pastures, which in summer support vast numbers of cattle, horses, sheep, and goats. Wheat, spelt, oats, barley, buckwheat, flax, hemp, and potatoes, are the principal crops. The vine is cultivated in the valleys; fruit-trees in the northern cantons; the orange, olive, and pomegranate on the Italian frontier.

16. **Zoology.**—The wild animals are very numerous, and exist in successive zones, like the plants, along the mountain-sides. The falcon and common mouse are met with at an elevation of 11,000 feet; the ermine, 10,000; bear, chamois, steinbok, and frog, 9000; lynx, marten, stag, and golden eagle, 8000; wildcat, hare, mole, bat, and ringed snake, 7000; badger, common viper, newt, and blindworm, 6000; wolf, fox, weasel, fitchet, 5000; lizard, 4000; rabbit, 3000; beaver, 2000; and hamster, 1000.

17. **Ethnography.**—The Swiss belong to two distinct races—the Teutonic and the Celtic; the former in the N.E. Cantons,

and the latter in the W. and S. The two races are to each other in the proportion of seven to ten—the Germans being the more numerous.

Language.—Four languages are spoken—viz., German in the N. and E., by about 1,670,000 of the population; French in the W., from the frontier to the river Sarine in Fribourg, by 474,000; Italian in the S., along the Italian frontier, by 135,500; and Romanche in the Engadine, or valley of the Inn, in Grisons, by 42,500.

Religion.—The inhabitants of the table-land and the Jura are chiefly Protestants, who number in all 1,417,754; the rest are Roman Catholics, numbering 971,840.

Education.—The Swiss are in general a well-educated people, and about one-seventh of the population are regularly attending school. Education is best conducted in the Protestant cantons. In 1844 there were 5500 primary schools, attended by 350,000 pupils. There are three universities—those of Basle, Berne, and Zurich, besides the Protestant college of Geneva. The university of Basle was founded in 1459, and among its more illustrious professors have been Erasmus, the three Buxtorfs, De Wette, and Hagenbach.

18. **National Character.** — The Swiss are a hardy, active, industrious, and temperate people; brave, patriotic, and highly virtuous; but their excessive love of money leads many of them to hire themselves out as soldiers to any foreign power, without very carefully inquiring into the justice of the cause they advocate.

19. **Literature.**—In literature Switzerland will bear honourable comparison with neighbouring countries.

POETRY.—Albert Haller, Solomon Gessner, Bodmer, Salis.

HISTORY.—Johann Müller, Sismondi.

FINE ARTS.—The Holbeins, Fontana, Bianchi, Borromini, Hofmann, and John Rudolph Huber, the Tintoretto of Switzerland.

PHYSICAL SCIENCE.—Paracelsus, Euler, the Bernouillis, Haller, Zimmerman, Tissot, Saussure, Charles Bonnet, Pictet, Deluc, De Candolle, Agassiz.

THEOLOGY.—Calvin, Beza, Zuingle, Vinet, d'Aubigné.

MISCELLANEOUS.—Jean Jacques Rousseau, Necker, Madame de Staël, Pestalozzi, Professor Soave, Abbé Fontana, Bonstetten, Dumont, Lavater, Burckhardt.

20. **Government, &c.**—The twenty-two Swiss cantons, each of which is an independent state (some of them, indeed, viz. Basle, Appenzell, and Unterwalden, forming more states than one), constitute a federal republic, united in a perpetual league. This league dates back as far as the year 1308, and at first embraced only three cantons—Uri, Schwytz, and Unterwalden. Other cantons attached themselves at various times afterwards, and it was not until 1815 that the present number was completed. The Federal Assembly, which is composed of two divisions—a

National Council and a Senate—holds its sittings at Bern; and that city is, in consequence, generally regarded as a sort of capital of the whole confederation.

Army.—All who are capable of bearing arms are liable to be called out; but the standing federal army consists of only 72,000 men, and a reserve force of half that number—total, 108,000.

Finance.—The *Receipts* of the confederation for 1851 amounted to £694,229, and the *Expenditure* to £690,062. The *Public Debt* in 1851 amounted only to £160,000.

21. **Commerce.**—The commerce of Switzerland is rather extensive, considering the inland character of the country and the immense mountain-barriers that surround it; but most of the lakes are navigable, and steamers are extensively employed. There are numerous mountain-passes leading from the interior to the southern cantons, and from these into Italy and the Tyrol, and they are usually available not only for beasts of burden, but for wheeled carriages. The recent construction of several important lines of railway cannot fail to extend the commerce of the country to an extent hitherto unknown.—(See par. 24.)

Basle and Geneva are the entrepôts of the foreign trade; Bern, Zurich, and Lucern, of the internal commerce; while the transit trade, which is very important, is principally enjoyed by Basle, Soleure, Coire, Geneva, Bellinzona, and Lugano.

The *Exports* consist principally of cattle, sheep, dairy produce, timber, watches, musical-boxes, jewellery, ribbons, and silk stuffs.

The *Imports* are mainly corn, cotton, fine cloth, iron and copper utensils, books, furniture, salt, salted fish, and articles of colonial produce—as tea, sugar, coffee, &c.

22. **Manufactures.**—Watches and jewellery are extensively manufactured in the W. cantons; linen in Bern; silks in Zurich and Basle; and cotton goods in the N.E. cantons: printing is carried on in Neuchâtel.

23. **Internal Communication.**—Several magnificent *roads* lead across the mountain-passes (par. 9); steamers ply on all the principal *lakes;* the Aar is navigable from its mouth to Thun, but the Rhine and Rhone do not become navigable till after passing the frontiers of Switzerland.

CANALS.—There are several short canals, one of which connects the Lake of Geneva with Lake Neuchâtel, and another the lakes of Zurich and Wallenstadt.

RAILWAYS.—Railways have made great progress within the last few years, the following being the principal lines:—That from Yverdun to Lausanne connects the lakes of Neuchâtel and Geneva; a second from Basle proceeds S. to Bern and S.E. to Lucern; a third joins this in the E. of Soleure, and proceeds eastward through Aarau, Zurich, and Frauenfeld to Rheineck on Lake Constance, and thence S. to Pfeffers (in St Gall), Chur, and Bellinzona, with branches to Locarno and Lugano; and a fourth connects Winterthur with St Gall. In 1858 there were 310 miles of railway open for traffic.

ITALY.

1. **Boundaries.**—Italy, including Savoy and the Austrian province of Venice, is bounded on the N. by the Alps and the Lake of Geneva; on the W. by France and the Mediterranean; on the S. by the Mediterranean and Ionian seas; and on the E. by the Strait of Otranto, the Adriatic, and Illyria.

Including Sicily, it is comprised between the parallels of 36° 40′ and 46° 42′ N., and the meridians of 5° 35′ and 18° 35′ E., and hence embraces 10° of lat. and 13° of lon. Rome, the ancient capital of Italy, situated almost exactly in the centre of this area (lat. 41° 54′, lon. 12° 27′ E.), is nearly on the same parallel of latitude as the N. of Portugal, Saragossa, Ajaccio, Scutari, Adrianople, Sinope, Teflis, Khiva, Pekin, Great Salt Lake City, Iowa, and New York; and nearly on the same meridian as Copenhagen, Leipsig, Munich, Venice, Tripoli, and St Paul de Loando.

2. **Form and Dimensions.**—The general outline bears a striking resemblance to that of a high-heeled boot, the toe of which approaches Sicily, while the heel is directed against Turkey. The extreme length of the peninsula from Lake Geneva to Cape Lucca is 760 miles; the average breadth is about 100 miles; but between the Rhone and the Isonzo it is 370 miles, while at the narrowest part, between Gaeta and Vasto, it is only 80 miles.

3. **Coast-Line.**—The coast-line is estimated at 2174 miles; but, except in the S., the shores are but slightly indented. The N.E. coast is low and flat, especially around Venice. The western side of Tuscany and of the Pontifical States is also low and insalubrious, but the remainder of the coast is considerably more elevated.

4. **Area.**—The aggregate area of the nine Italian States is estimated at 121,487 square miles, or a little less than that of the British Isles.

5. **Population.**—The population in 1857 amounted to 25,829,042, being about 2,000,000 less than the population of the United Kingdom in 1851. The average for the whole country gives 212 persons to each square mile, but Lombardy and Venice—reckoned among the most densely-peopled portions of Europe—have 314 persons to the mile, whereas Sardinia has only 178.

6. **Political Divisions.**—The names, area, and population of the different states will be found in the following table:—

POLITICAL DIVISIONS.

STATES.	Designation.	Area in Eng. Sq. Miles.	Population in 1857.
Venice,	Kingdom	9,181	2,494,505
Sardinia* (including Lombardy),	Kingdom	37,496	8,177,047
Parma,	Duchy	2,766	499,835
Modena,	Duchy	2,317	604,512
Tuscany (including Lucca),	Grand-duchy	8,983	1,793,967
Pontifical States,	Kingdom	17,494	3,126,263
Naples, or Two Sicilies,	Kingdom	43,175	9,117,050
Monaco,	Principality	53	7,600
San Marino,	Republic	21	7,800
Total,		121,487	25,829,042

Kingdom of Sardinia.—The Sardinian States consist of six natural divisions,—viz., Lombardy, recently acquired, between the Mincio and the Ticino; Piedmont ("foot of the mountains"), between the Ticino and the Alps; Savoy, beyond the Alps, in the N.W.; Nice and Genoa, between the mountains and the coast; and the island of Sardinia, S. of Corsica. For administrative purposes the continental part is divided into twenty, and the insular into three provinces. In the following lists of towns we adhere to the old and well-recognised divisions, but give the capitals of the new provinces in *italics;* the names of the provinces and capitals being almost invariably the same.

LOMBARDY OR MILAN.†—*Milan* 174, Busto-Arsizio 11 n. (Olona), Viadana 15, Casal-Maggiore 15, *Cremona* 28, Codogno 10 n. (Po), Gonzago 25 n. (Secchia), *Mantua* 30 (Mincio), *Brescia* 34 (Mella),

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* By the Treaty of Villafranca, signed at Zurich in October 1859, Lombardy, with the exception of Peschiera and Mantua, was ceded by Austria to Sardinia. Lombardy has an area of 8330 English square miles, and a population, in 1854, of 3,009,503. The area of Sardinia was formerly 29,167 square miles, and the population 5,167,542.

† In pronouncing Italian proper names the student will be aided by the following rules:—

a=*a* in English *far*, as in Mortara, Novaro.
e=*a* in *fate*, as in Crema; but when short it is=*e* in *met*, as in Vercelli.
i=*ee* in *meet*, as Messina, Pisa, Arpino (*Mes-see'na, Pee'za, Ar-pee'no*).
o has two sounds as in English—one long, as in Lodi, and the other short, as in Terdoppio.
u=*u* in *full*, as Lucca, Perugia, Pozzuoli (*Look'ka, Pe-roo'ja, Pot-soo-o'le*).
ai=*ai* in *aisle*, as Maira, Cairo (*Mi'ra, Ki'ro*).
au=*ow* in *now*, as in Ausa (*Ow'sa*).
ae makes two syllables, as in Gaeta (*Ga'e-ta*).
ie also makes two syllables, as Pienza, Piemonte, Trieste (*Pi-en'za, Pi-e-mon'te, Tri-est'* or *Tri-es'te*).
c and *cc* before *a, o, u*=*k*, as Casale, Monaco, Lucca; but before *e, i, y*=*ch* in *church*, as in Ticino, Piacenza, Lecce (*Ti-chee'no, Pi-a-chen'za, Let'che*).

Lodi 19, *Como* 18, Canzo 11 (Adda), *Bergamo* 34 (Brembo), Monza 19 (Lambro), *Pavia* 26 (Ticino).

Towns between 5000 and 20,000 Inhabitants.—Varese, Revere, Sabionetta, Villafranca, Lonato, Salo, Bozzolo, Pontevico, Soresina, Chiari, Castiglione, Montiglione, Treviglio, *Sondrio*, Crema, Caravaggio, Clusone, San Columbano, Borghetta, Binaso, Abbiate-Grasso, Latisana, Fenzone, Tolmezzo. (Regarding Mantua, see note, p. 342.)

PIEDMONT.—TURIN 180, Casale 21, Carmagnola 12, Saluzzo 14 n. (Po), Vigevano 15 (Ticino), *Novara* 18 (Terdoppio), Voghera 10 (Staffora), Tortona 11 (Scrivio), *Alessandria* 42, Asti 25, Bra 12, Cherasco 11 (Tanaro), Fossano 16, *Coni* 20 (Stura), Mondovi 17 n. (Pesio), *Vercelli* 18 (Sesia), Racconigi 11, Savigliano 18 (Maira), Pinerolo 15 (Clusone).

Valenza, Trino, Crescentino, Chivasso, Moncaglieri, Carignano, Villafranca, Cavor, Barge, Trecate, Oleggio, Mortaro, Borgo-Manero, Castel Nuova, Marengo, San Salvatore, Alba, Bene, Garessio, Acqui, Castellazo, Nizza-Monferrato, Fort de Monte, Chiusa, Biella, Caluso, *Ivrea*, Aosta, Locana, Rivoli, Giaveno, Busca, Sommariva, Susa, Domodossola.

SAVOY.—*Chambery* 16 (Leisse), *Annecy* 9 (Cheran), Chamouni.

NICE.—*Nice* 34, Vintimiglia 5, San Remo 7, Porto-Maurizio 10, Oneglia 5 (Ligurian coast).

GENOA—*Genoa* 120, *Savona* 12, Chiavari 11, Spezia 10 (Gulf of Genoa), Novi 11 (Scrivio).

Alassio, Albenga, Finale, Varaggio, San Pierre d'Arena, Levanto, Lerici, Gavi, Ovada.

ISLAND OF SARDINIA.—*Cagliari* 30 (south coast), Iglesias 12, Oristano 16 n. (west coast), *Sassari* 25 n. (Turritano).

Quarto, Bosa, Alghero, Ozieri, Tempio, *Nuoro*.

Parma is divided into five administrative provinces,—viz., Parma, Piacenza, Borgo-San-Donino, Val de Taro, and Lunigiana de Parma.
Towns.—PARMA 41 (Parma, affluent of the Po), Piacenza 30 (Po), Borgo-San-Donino 5 n., Borgo-Taro 3 (Taro), Pontremoli 5 (Magra).

Modena consists of seven provinces,—viz., Modena, Reggio, Guastalla, Frignano, Garfagnana, Massa, and Lunigiana.
Towns.—MODENA 31 (Secchia, affluent of the Po), Guastalla 23, Finale 5, n. (Po), Reggio 18 (Crostolo); Carrara 6 (Avenza), Massa 8 (Frigido).

ch=*ch* in *monarch*, as Secchia, Chiana, Chienti (*Sek'ki-a, Ki-ah'na, Ki-en'te*).
cia, cio, ciu=*cha, cho, chu* in English, as Pescia, Mincio (*Pes'cha, Min'cho*).
g before *a*, *o*, *u*=*g* in *gone*, as Gaeta, Borgo, Gubbio ; but before *e*, *i*, *y*=*g* in *gentle*, as Genova, Girgenti (*Je-no'va, Jir-jen'te*).
gg before *e*, *i*, *y*=*dj*, as Reggio, Oleggio, Foggia (*Red'jo, Ol-ed'jo, Fod'ja*).
gh=*gh* in *ghost*, as Alghero, Voghera (*Al-ghe'ro, Vo-ghe'ra*).
gli=*lli* in *million*, as Paglione, Cagliari (*Pal-yo'ne, Cal-yah're*).
gn=*n* in *onion*, or *ñ* Spanish, or *gn* French, as Carmagnola, Bologna (*Car-man-yol'a, Bo-lon'ya*).
j=*y* in *yonder*, as Pistoja, Roja (*Pis-to'ya, Ro'ya*).
sc before *e*, *i*=*sh* in *shall*, as Sciacca, Brescia (*She-ac'ca, Bresh'sha*).
z=English *dz*, and *zz*=*ts*, as Spezia, Nizza (*Sped'za, Nit'sa*).

Tuscany is divided into six prefectures,—viz., Florence, Lucca, Pisa, Siena, Arezzo, and Grosseto.

Towns.—FLORENCE 114, Pisa 25 (Arno), Pistoja 12 (Ombrone), Prato 12 (Bisenzio), Arezzo 10, Montepulciano 11 n. (Chiana), Lucca 25 (Serchio), Leghorn 85 (west coast), Siena 25 (Arbia).

Empoli, Ligna, Montevarchi, Poppi, Vinci, Volterra, Pescia, Colle, Tizzana, Piombino, Cortona, Castel Fiorentino, Porto-Ferrajo, Fojana, Grosseto.

The Pontifical States are divided into 20 provinces or legations, which are subdivided into 45 districts, 177 circles or governments, and 832 communes. The legations are named after their principal towns, the latter of which we give in *italics*. There are ten provinces on the western side of the Apennines, and ten on the eastern.

WESTERN PROVINCES.—ROME 180, *Perugia* 19 (Tiber), Terni 10 (Nera), *Rieti* 12 (Velino), *Orvieto* 8 (Paglia), Gubbio 17 (Chiasco), *Spoleto* 7 (Marogia), *Viterbo* 14 (Arcone), *Civita Vecchia* 7 (west coast), *Velletri* 10 (Astura), *Frosinone* 8 (Cossa, sub-affluent of the Garigliano), *Benevento* 23 (Calore, affluent of the Volturno).

Tivoli, Foligno, Corneto, Bolsena, Astura, Albano, Terracina, Pontecorvo, Anagni, Palestrina.

EASTERN PROVINCES.—*Ferrara* 32 (Po), *Bologna* 78 (Reno), Imola 10 (Santerno), Faenza 21 (Lamone), *Ravenna* 17, *Forli* 16 (Montone), Rimini 16 (Ausa), Pesaro 12 (Foglia), *Urbino* 7 n. (Metauro), *Ancona* 36 (east coast), Loreto 8, Osimo 14 (Musone), Recanati 16, *Macerata* 19 (Potenza), Tolentino 10, *Camerino* 6 (Chienti), *Fermo* 14 (Fermo), *Ascoli* 13 (Tronto).

Comacchio, Cervia, Cesena, Savignano, Fano, Sinigaglia, Jesi, Fabriano.

The Neapolitan States are divided into twenty-two provinces, fifteen of which belong to the mainland and seven to Sicily. Of the former, seven are on the western side of the Apennines,—viz., Naples, Terra di Lavoro, Principato Ultra, Principato Citra, Calabria Citra, Calabria Ultra II., Calabria Ultra I.; and eight on the eastern,—viz., Basilicata, Terra d'Otranto, Terra di Bari, Capitanata, Molise, Abruzzo Citra, Abruzzo Ultra I., Abruzzo Ultra II. The Sicilian provinces are named after their respective capitals; the others are generally different. In the annexed lists the capitals of provinces are printed in *italics*.

WESTERN PROVINCES.—NAPLES 416, Pozzuoli 14, Castellamare 30, Sorrento 10 (Gulf of Naples), Gaeta 15 (Gulf of Gaeta), Arpino 12 n. (Garigliano), *Capua* 8 (Volturno), Ariano 14 n. (Calore), *Avellino* 21 (Sabbato), *Caserta* 25 n., Aversa 19 n., Acerra 10 (Lagni), Sarno 12 n. (Sarno), *Salerna* 16 (Gulf of Salerno), Nicastro 10 (west coast), *Reggio* 7 (Strait of Messina), *Catanzaro* 13 (Gulf of Squillace), Bisignano 10, *Cosenza* 9 (Crati).

Fondi, Sora, Teano, Isernia, Atripalde, Nola, Portici, Nocera, Amalfi, Buccino, Sala, Policastro, Lagonegro, Paola, Pizzo, Gioja, Palmi, Scylla, Cotrone, Rossano, Cassano, Castrovillari.

EASTERN PROVINCES.—*Potenza* 9 (Basente), Matera 12, Altamura 15 n., Gravina 10 (Gravina), Taranto 18, Gallipoli 11 (Gulf of Taranto), *Lecce* 14, *Bari* 28, Molfetta 22, Trani 14, Barletta 24 (east coast), Cerignola 16 n., Melfi 10 (Ofanto), *Foggia* 24 (Cesone), Lucera 13 (Salsola), San Severo 18 (Radicosa), *Campobasso* 3 (Biferno), Lanciano 14 n., Ortona 10 (Adriatic), *Chieti* 16, Sulmona 10 n., *Aquila* 10 (Pescara), *Teramo* 10 (Trontino).

Nardo, Oppido, Otranto, Brindisi, Mola, Manfredonia, Viesti, Minervino, Bovino, Troja, Ascoli, Atessa, Vasto, San Angelo, Atri.

SICILY.—*Palermo* 200, Cefalu 10, Termini 9, Alcamo 16 n., Monreale 14 n. (north coast), *Trapani* 24, Marsala 21 (west coast), Sciacca 13, *Girgenti* 20, Alicata 13, Terranova 10, Scicli 10 (south coast), Noto 15, *Syracuse* 14, Agosta 14, *Catania* 55, Aci Reale 14, *Messina* 84 (east coast), Corleone 12 (Belici), Naro 10, Canicatti 18 (Naro) *Caltanisetta* 16 n. (Salso), Mazzarino 12 n., Piazza 16, Caltagirone 22 n. (Terranova), Vittoria 11, Comiso 10 (Comiso), Ragusa 16 (Ragusa), Modica 22 (Scicli), Paterno 11, Nicosia 15 (Giaretta), Lipari 14 (Island of Lipari).

Milazzo, Patti, Mistretta, Calatafimi, Mazzara, Castellamare, Palma, Taormina, Carini, Salemi, Castronova, Mussumeli, Aragona, Pietra-Perzia, Castrogiovanni, Spaccaforna, Lentini, Vizzini, Bronte.

Monaco.—Monaco 1, Mentone 5 (south coast of Nice).

San Marino.—San Marino 1 (Ausa, above Rimini).

7 Descriptive Notes.

THE SARDINIAN STATES contain one hundred and twenty-four towns of above 5000 inhabitants; forty-six above 10,000; fourteen above 20,000; and three (Milan, Turin, and Genoa) above 100,000.

Milan (Ital. *Milano*, Ger. *Mailand*, anc. *Mediolanum*), formerly capital of the Lombardo-Venetian kingdom, and now of the Sardinian province of Lombardy or Milan; an ancient, populous, and magnificent city on the left bank of the Olona; is adorned by numerous elegant public buildings, among which are a magnificent cathedral of white marble, adorned with fifty-two columns and 4500 statues, unrivalled for the delicacy of their carved work; and an amphitheatre, erected by Napoleon I., capable of containing 35,000 spectators. The principal scientific and educational establishments are the Royal Academy of Arts and Sciences, with a library of 100,000 volumes, valuable MSS. and pictures; an astronomical and magnetical observatory, and botanic garden; the Ambrosian Library with 60,000 volumes and 15,000 MSS.; four gymnasia, a normal school, school of medicine and surgery, and several learned societies. The city is of a circular shape, enclosed on three sides by a wall surrounded by broad ramparts nearly eight miles in circumference. From its position on the great line of railway leading from Venice to Turin, and on the principal route across the Alps, it is favourably situated for trade. Milan was the ancient capital of the Insubres, who founded it B.C. 400; was taken by the Romans B.C. 222; was inhabited and embellished by many of the Roman emperors. On the division of the Empire under Diocletian it became one of the capitals, and continued to be the residence of the Emperors of the West till the invasion of the Huns, who took and plundered it. The poet Virgil studied at Milan ; it was the see of St Ambrose, and the birthplace of many popes and eminent men ; was capital of a republic in 1056 ; in the end of the fourteenth century was made the capital of the Duchy of Milan ; passed successively under the dominion of Spain, Austria, and France ; in 1805 became capital of the Kingdom of Italy ; was restored to Austria in 1815 ; was taken by the French and Sardinian army in 1859, and ceded to Sardinia by the treaty of Villafranca in the same year. *Cremona,* a fortified city on the Po, long famous for its violins. *Mantua,* a strong fortress on the Mincio, and in a very unhealthy situation ; derives its celebrity mainly from the fact that the poet Virgil was born in the village of Andes in its immediate vicinity. *Brescia* (Brixia), an important commercial and manufacturing city, noted for its fine wines, cutlery, and firearms. *Lodi,* celebrated for the decisive victory obtained by Napoleon I. over the Austrians in 1796. *Como* (Comum), at the south-western extremity of the beautiful lake of same name, has extensive manufactures of cloth and silk, and was the birthplace of the Younger Pliny. *Canzo,* the capital of a rich district noted for its silk-manufactures. *Bergamo* (Bergomum), a fortified city on the Brembo, with numerous manufactures, and a great annual fair in August, at which the sales sometimes amount to £1,200,000. *Monza* (Modœtia); here are kept the regalia and iron crown of Lombardy. *Pavia* (Ticinum, and afterwards Papia), on the Ticino, is a place of historical interest ; has a university, founded by Charlemagne, in which Spallanzani and Volta were professors ; in 1852 it had 57 professors, 1484 students, and a library of 50,000 volumes. TURIN (anc. *Augusta Taurinorum,* Ital. *Torino*), the capital of Piedmont, and of the Sardinian dominions, situated on the left bank of the Po ; ranks as the first city in Italy for the number and importance of its literary institutions, amongst which the university occupies the first place. It has 5 faculties, 42 professors, 1120 students (in 1842), and a library of 110,000 volumes. It was an important place even in the time of Hannibal, who destroyed it ; but Augustus made it a Roman colony. Near Turin, on the S.W., are the three valleys which in the middle ages formed the home of the Waldenses, the early pioneers of the Reformed religion. *Casale,* once the capital of the celebrated Marquises of Montferrat, has an important manufactory of silk twist. *Vigevano,* occupied with the manufacture of silk stuffs, hats, soap, and macaroni. *Novara* has two colleges, and manufactures of silk and linen. *Alessandria,* a large fortified town on the Tanaro, with extensive trade and two annual fairs. *Asti,* celebrated in the middle ages for its industry and commerce ; the birthplace of Alfieri, the dramatist, in 1749. The country around abounds in mineral springs, and produces the best wines in Piedmont. *Bra* has metal-foundries and silk-manufactures. *Cherasco,* on the Tanaro, with a good trade in wine and silk. *Fossano,* mineral baths and various manufactures. *Coni,* various manufactures, and considerable trade in agricultural produce. *Mondovia:* here the French defeated the Sardinian troops in 1796. *Vercelli* contains a valuable library of old MSS., including a copy of the laws of the Lombards, and a MS. of the Gospels, written by Eusebius in the fourth century : it carries on a large trade in rice, which is raised in the vicinity. *Racconigi* and *Savigliano,* with important manufactures of silk, linen, and woollen fabrics. *Pinerolo,* a trading and manufacturing town at the foot of the Alps. *Marengo,* memorable for the decisive victory of the French over the Austrians, 14th June 1800. *Acqui,* celebrated for its great antiquity, and for the remains of a Roman aqueduct. *Aosta*, famed for its vegetable and mineral products—immense pine-forests, mines of copper, iron, lead, and silver, and quarries of marble. *Chambery*, the capital of Savoy, is the only important city in the duchy: it has various manufactures, and a trade in metals and wines. *Annecy* contains glass-works and various other manufactures. *Chamouni*, a far-famed valley in the N.E. of the province, near the foot of Mont Blanc, is the usual place from which the ascent of the mountain is made. The glaciers which descend into this valley (among others the Mer-de-Glace) are the grandest in the Alps. *Nice* (Ital. *Nizza*, anc. *Nicæa*), originally a Greek colony of the Massilians, and celebrated as one of the earliest seats of Christianity in Europe, is now one of the principal seaports of Sardinia. It is beautifully situated on the French frontier, and is much resorted to in winter by English and other visitors, for whom ample accommodation is provided. The climate, though exceedingly pleasant, is now ascertained to be prejudicial to persons afflicted with pulmonary and bronchial complaints. Nice is the birthplace of the painter Venloo, and the astronomer Cassini. *Porto-Maurizio*, with an extensive trade in olive-oil. *Savona* maintains a brisk trade in lemons and oranges. *Genoa* (Ital. *Genova*, anc. *Genua*), a celebrated and ancient city, originally the chief town of the Ligurians, and afterwards belonging to the Romans and Carthaginians, did not rise to any historical importance until the period of the middle ages. From the eleventh to the eighteenth century it was the capital of a commercial republic, which planted numerous colonies in the Levant, and on the shores of the Black Sea. It was taken by the French in 1797, and ceded to Sardinia in 1815. It is a flourishing seaport, the seat of a university, and of extensive trade: exports valued at £3,000,000, imports at £2,000,000; has railway communication with Turin and Milan; and was the birthplace of Columbus, the celebrated navigator, in 1435. *Chiavari*, a maritime town, a good deal resorted to by invalids. *Novi*: here the French were defeated by the Austro-Russian army in 1799; has manufactures of silk thread and an active trade. *Cagliari* (the ancient *Caralis*), originally a Carthaginian colony, and the capital of the island Sardinia under the Romans, is a fortified maritime city, the residence of the viceroy, and of several foreign consuls, and the seat of a university, which is well attended. *Iglesias*, near the west coast, maintains an active trade in wine. *Oristano* exports corn, salt, and fish. *Tassari*, the most important place in the island except Cagliari, has a university, museum, and public library, and a trade in tobacco and fruits.

THE DUCHY OF PARMA contains only five towns of any importance, and of these only two, Parma and Piacenza, exceed 20,000 inhabitants.

Parma, the capital, a very ancient town, became a Roman colony B.C. 183; it is the residence of the reigning Duke. The university was suppressed in 1831, but it has still a school of four faculties, attended by 400 students, besides numerous scientific establishments. *Piacenza* (anc. *Placentia*) was founded by the Romans B.C. 219, as a protection against the recently-subdued Gauls. It is a well-built and handsome city, adorned with many fine works of art, and is the seat of a college with three faculties. Here Hannibal defeated the Romans B.C. 219; and it is the birthplace of Pope Gregory X., Cardinal Alberoni, Pallavicini, and Laurentius Valla.

THE DUCHY OF MODENA contains six towns of above 5000 inhabitants, of which only two, Modena and Guastalla, exceed 20,000.

Modena (anc. *Mutina*), of Celtic origin, and the first place which the Romans took from the Boii, is now the capital of the duchy; contains a university, botanic garden, and rich cabinets of natural history—besides several manufactures; birthplace of Ligonius the antiquary, Fallopius the anatomist, and Tassoni the poet. *Reggio*, a fortified city on the Crostolo, the birthplace of Ariosto in 1474, and of Correggio the painter in 1494. *Carrara* and *Massa di Carrara* have famous quarries of statuary marble.

THE GRAND-DUCHY OF TUSCANY contains twenty-four towns of above 5000 inhabitants; nine above 10,000; five above 20,000; two above 50,000; and one (the capital) above 100,000.

Florence (anc. *Florentia*, Ital. *Firinze*), a walled city on the Arno, surrounded by most delightful scenery, and adorned by many magnificent works of art. The Florentine Gallery contains the richest collections of paintings, sculptures, and antiquities in the world; also a university, and numerous scientific and educational establishments; various manufactures of silks, carpets, straw-hats, mosaic work, porcelain, and jewellery; birthplace of Dante, Leonardo da Vinci, Boccaccio, Machiavelli, Amerigo Vespucci, Vannuchi, Cellini, and Pope Leo X. *Pisa*, an ancient but decayed city on the Arno, containing many noble edifices built of marble—a fine cathedral—a famous leaning tower, 178 feet in height, the topmost story of which overhangs the base about 13 feet—an ancient university, which is still the great centre of education in Tuscany. Pisa was one of the twelve cities of ancient Etruria: from the tenth to the fourteenth century it was the capital of an enterprising republic; and here Galileo was born in 1564. *Pistoja* claims the invention and first manufacture of pistols; and continues to construct firearms, cutlery, and surgical instruments. *Prato*, numerous manufactures and copper-works for smelting the copper found in its vicinity. *Arezzo* (anc. *Arretium*), one of the twelve Etruscan cities; birthplace of Mecænas, Petrarch, Michael Angelo, Vasari, Guido, and Redi. *Lucca*, originally a Ligurian town, has an ancient amphitheatre in a tolerable state of preservation, and of great size; a cathedral containing many valuable paintings; manufactures of silk, woollen stuffs, and paper, and famed for its mineral baths. *Leghorn* (anc. *Portus Herculis* or *Liburnum*, Ital. *Livorno*), originally one of the twelve independent Etruscan towns, remained a place of importance till the fall of the Western Empire, and still contains many interesting remains of antiquity; it is the principal seaport of Tuscany; has a coral-fishery; is noted for the manufacture of Tuscan straw-bonnets, woollen caps, glass, and paper; it ranks as the greatest commercial emporium in Italy, and embraces all the foreign trade of Tuscany; contains the remains of Smollett the novelist. *Siena* was the capital of a powerful republic in the middle ages, when it contained 100,000 inhabitants; several magnificent public edifices adorned with paintings of the Siennese school; a university, formerly celebrated, which in 1844 was attended by 136 students, and had a library of 50,000 volumes and 5000 MSS. The mountains in the vicinity contain rich marble quarries. *Volterra* (Voliterræ), with a citadel, now employed as a criminal house of industry; numerous Etruscan antiquities, many of which are deposited in the town-hall: in the vicinity are singular borax lagoons, rich copper-mines, brine-springs, and salt-works, and quarries of alabaster, from which beautiful vases are largely exported.

THE PONTIFICAL STATES, also called the States of the Church, contain forty-eight towns of above 5000 inhabitants; twenty-three above 10,000; six above 20,000; two (Rome and Bologna) above 50,000; and one (the capital) above 100,000.

Rome, on the left bank of the Tiber, about 16 miles from its mouth, was at first the principal city of Latium (founded B.C. 753), was afterwards the most important city in Italy, and at length the mistress of the whole world, as known to the ancients. In the reign of Augustus the population amounted to at least one million, one-half of whom were slaves; and it continued to increase till after the time of Vespasian. The city was taken by Alaric in A.D. 410, and by Genseric in 455; it passed successively under the dominion of the Ostrogoths and the Emperors of the East; was given to the popes by Pepin and Charlemagne in the eighth century, and then became the capital of the States of the Church. Rome is unrivalled for its artistic and architectural riches, but has a sad and desolate appearance. Only about a third of the space within the walls is inhabited; the streets are narrow, dirty, and unpaved; the finest palaces and the most wretched hovels are often in closest juxtaposition. The situation is unhealthy, especially in summer; but the climate is mild and agreeable in winter. The cathedral of St Peter's is the largest and most sumptuous structure of the kind in the world. It was founded in 1450, and its erection occupied 176 years. It was planned and commenced by Bramante, but altered and carried on by Raphael and Michael Angelo: length 613 feet, width 286 feet, height to top of cross 435 feet. Other celebrated churches are St John Lateran, where the popes are crowned; the Vatican, adjoining St Peter's, a gorgeous palace, forming the permanent residence of the popes, and containing a famous library of 100,000 volumes and 23,000 MSS., written in all languages; the university, founded in 1244, well attended, and having forty-two professors; and the famous college of the Propaganda, in which natives of all parts of Europe are trained as missionaries for the propagation of the Romish faith. *Perugia* (anc. *Perusia*) was one of the twelve Etruscan cities: under the Empire it was the most important city of Etruria, and long defied the power of the Goths. Some of the most interesting Etruscan antiquities have been found here. It is now the capital of a delegation, and only noted for its two great annual fairs. *Terni*, noted for the magnificent waterfalls in the vicinity, unrivalled in Europe, though of artificial origin. *Rieti* (anc. *Reate*), situated in a lovely valley, which is said to rival in beauty the Thessalian Tempe. *Gubbio* (anc. *Iguvium*); here were discovered, in 1444, in the ruins of the temple of Jupiter, seven bronze tables with Umbrian inscriptions, forming most interesting remains of that language; they are known as the Eugubian Tables, and are still preserved at Gubbio. *Viterbo* (Fanum Voltumnæ), capital of delegation of same name, was one of the chief cities of the Etruscan league, and figures largely in the history of the middle ages. *Civita Vecchia* (anc. *Centumcellæ*), capital of a delegation, and the principal seaport of the Pontifical States. *Velletri* (Velitræ), where Augustus was born, B.C. 63. *Benevento*, capital of a legation of same name, which is enclosed by the Neapolitan province Principato Ultra. Under the Lombards it was the capital of a duchy. Napoleon erected the province into a principality in 1806; it was restored to the pope in 1814, and it is now an archbishop's see. It was the seat of several councils in the eleventh and twelfth centuries. *Ferrara* (Forum Allieni), capital of a delegation, and the most northern city of the

Papal States, on an arm of the Po; is fortified and garrisoned by Austrian troops. It is the seat of a famous university, at which Ariosto was educated; contains a public library of 80,000 volumes, besides numerous MSS., including some of Ariosto and Tasso; and was for a time the asylum of Calvin, Marot, and other reformers. *Bologna* (Bononia), once the capital of the Etruscans, and now of a legation. In regard to population, it is the second city of the Papal States; is the seat of a famous university, which in 1841 had 560 students; the birthplace of Galvani, Aldrovandi, Malpighi, the painters Guido, Albano, Domenichino, and the three Caracci. *Faenza* (Faventia), long celebrated for its earthenware, and supposed to have been the first Italian city in which the manufacture of that article was introduced. It was the birthplace of Torricelli, the inventor of the barometer. *Ravenna*, a very ancient town, founded by the Pelasgi; the residence of the emperors when Italy was threatened by the barbarians, and one of the principal stations of the fleet. It is rich in antiquities of the early middle ages. *Forli* (Forum Livii), the seat of a university, and of a cardinal legate; possesses considerable trade and manufactures. *Rimini* (Ariminum), originally an Umbrian town, was colonised by the Romans B.C. 268; became the seat of a great ecclesiastical council A.D. 359; and has important sulphur mines in the vicinity. *Urbino* (Urbinum Hortense), capital of delegation Urbino e Pesaro; contains a ducal palace, a cathedral, a college, and a manufactory of pins, and was the birthplace of Raphael in 1483. *Ancona*, capital of a delegation, and a fortified seaport, which is one of the best frequented in Italy. *Loreto* owes its origin to a famous chapel of the Virgin, over which a magnificent church has been built. *Ascoli* (Asculum Picenum), a fortified town, capital of a delegation on the Tronto.

THE KINGDOM OF NAPLES, also called the Kingdom of the Two Sicilies, contains one hundred and twenty-eight towns of above 5000 inhabitants; sixty-seven above 10,000; sixteen above 20,000; four (Naples, Palermo, Catania, and Messina) above 50,000; and two (the capital and Palermo) above 100,000.

Naples (Ital. *Napoli*, anc. *Neapolis*, signifying the New Town, to distinguish it from the neighbouring Palæpolis, or Old Town), capital of the kingdom, and by far the most populous city in Italy, is beautifully situated on the northern shore of the bay of same name, and rises in the form of an amphitheatre on the slope of a range of hills. The date of its foundation is uncertain, but it was probably about B.C. 417; came into the hands of the Romans B.C. 290; continued to be a flourishing place till the time of Titus, when it was destroyed by an earthquake; was rebuilt by that emperor. It is now the centre of all the learned institutions, of the kingdom; has five public libraries and many public schools; its university, founded in 1224, had, in 1841, 1550 students. Naples is the principal seaport of the kingdom, possesses several manufactures and considerable commerce; the streets are infested with medicants, called *lazzaroni;* has frequently suffered from earthquakes, and eruptions of Mount Vesuvius. Here Virgil studied. In its vicinity are the celebrated ruins of *Pompeii* and *Herculaneum*, which were buried during an eruption of Vesuvius in A.D. 79, and the existence of which was unknown until 1720, when they were accidentally discovered in sinking a well. Since then excavations have been made from time to time, and many of the most valuable relics of antiquity have been found, which reveal to us more of the private life of the ancients than all other ancient remains put together. *Gaeta* (Gaïeta), a fortified seaport town, containing a garrison: here Cicero was assassinated B.C. 43, and here Pope Pius IX. found an asylum in 1849. *Arpina* (Arpinum), the birthplace of Cicero, Marius, and Agrippa. *Avellino* (Abellinum), a fortified town, capital of the province Principato Ultra; near it the Val di Gargano, famous for the victory of the Samnites over the Romans, who were here compelled to pass under the yoke in the year of Rome 433. *Caserta,* capital of province Terra di Lavoro; near it is the royal silk-factory of S. Leucio. *Aversa,* founded in A.D. 1020, and famed for its almond-cakes, which are in great demand at Naples. *Pozzuoli* or *Puzzuoli* (Puteoli), originally a Greek colony, founded by the Greeks of Cumæ B.C. 521; visited by St Paul in his first journey to Rome. The city gives its name to a reddish earth or clay found in its vicinity, called *pozzolana,* which, when mixed with lime, forms an excellent cement. *Castellamare* (Stabiæ), destroyed by the great eruption which buried Pompeii, A.D. 79. The elder Pliny perished here during the catastrophe. It is now an important place, possessing various manufactures of linen, silk, and cotton fabrics. *Sorrento* (Surrentum), the birthplace of Tasso in 1544. *Sarno:* here was fought a battle between the troops of Justinian and the Goths, which ended in the fall of the Gothic sway in Italy. *Salerno* (Salernum), capital of province Principato Citra, contains a university which in the middle ages had a famous school of medicine. *Reggio* (Rhegium Julii), capital of province Calabria Ultra I., opposite Messina, and the most southern city and seaport of Italy. It was founded by Greek colonists B.C. 743, and the Greek language continued to be spoken in it till a late period of the middle ages. It was one of the most renowned cities of Magna Græcia—was celebrated for its wines—the birthplace of Agathocles, Hippias, Hipparchus, and of several poets and sculptors—and was touched at by St Paul in his voyage to Rome. *Catauzaro* (Catacium), capital of province Calabria Ultra II., has manufactures of silk velvet, cloth, and other tissues. *Potenza,* a fortified town, and capital of province Basilicata. *Altamura* has a university founded by Charles of Anjou. *Taranto* (Tarentum), an ancient city of great historic celebrity, founded B.C. 708 by Spartan emigrants; it long exercised a sort of supremacy over all the other Greek cities in Italy; by its commerce and manufactures it acquired immense wealth, a large portion of which was expended in hiring mercenary troops to defend its liberties. *Gallipoli* (Kallipolis), a fortified seaport town, noted for its cisterns excavated in the rock, and peculiarly adapted for clarifying olive-oil: the port is well frequented, and is the great mart for the oil of Apulia. *Lecce* (Aletium), capital of province Otranto, has a royal manufactory of snuff, and various other manufactures. *Bari* (Barium), capital of province Terra di Bari, once celebrated for its fisheries; is a place of considerable importance, with a good quay and roadstead, and a trade in several branches of manufacture. *Molfetta* (Respa), a seaport town, trading in corn, oil, and almonds. *Barletta* (Barolum), a fortified seaport town, carrying on a brisk trade with the other towns on the Adriatic. *Cerignola* maintains a trade in cotton and fruits. *Foggia,* capital of province Capitanata, in the Apulian plain, is considered the second city in Naples for wealth and importance; it is the entrepôt of an extensive trade in corn, wool, cheese, cattle, wine, oil, and capers. *Chieti* (Teate), capital of province Abruzzo Citra, on a hill near the Pescara, was taken by the French in 1802. *Aquila* (Amiternum), capital of province Abruzzo Ultra, one of the most commercial cities in the kingdom: birthplace of Sallust. *Sulmona,* the birthplace of the poet Ovid. *Capua,* capital of province Terra di Lavoro, on the Volturno, strongly fortified, and is considered one of the keys of the kingdom; for though far from the frontier, it is the only fortress that covers the approach to Naples. *Oppido,* on the Brandano, destroyed by the great earthquake of Calabria in 1783, which overwhelmed all the towns and villages within a radius of twenty-two miles of this town. *Palermo* (Panormus), the capital of Sicily, and, next to Naples, the most important city in the Neapolitan dominions; it exceeds Rome in population, has an extensive export and import trade, a cathedral, a royal palace, and an observatory; is the residence of the military commandant of the island, and has an arsenal and shipbuilding docks, a university, which in 1841 had 735 students, a library of 40,000 volumes, a botanic garden, and numerous learned societies. Palermo was founded by the Phœnicians, was long the chief station of the Carthaginian fleet; fell into the hands of the Romans B.C. 254; was afterwards the capital of the Saracen States in the island; was taken by the Normans A.D. 1072; and in 1282 was the scene of the massacre called the "Sicilian Vespers," which, commencing in the freak of a Frenchman, in which he was held to have insulted a Sicilian lady going to church, ended in the utter extermination of every Frenchman in the island. *Trapani* (Drepanum), capital of province of same name, has a good harbour and considerable trade; was the scene of a celebrated sea-fight between the Roman and Carthaginian fleets B.C. 249. *Marsala* (Lilybæum), long the capital of the Carthaginian dominions in Sicily, now chiefly famous for its wine, which it largely exports. *Sciacca* (Thermæ Selinuntinæ), a seaport town, forming one of the principal depôts in the island for corn; has an export trade in fruits, anchovies, sulphur, and barilla; birthplace of the historian Fazzello. *Girgenti* (Agrigentum), founded B.C. 582, soon became one of the wealthiest and most splendid cities in Sicily—a fact still attested by its numerous ruins of magnificent temples and other public buildings: it is the chief port in Sicily for the shipment of sulphur. *Terranova,* near the site of the ancient Gela, which was founded B.C. 690 by Rhodian and Cretan colonists, and soon rose to great power and wealth, so that its citizens were able to found Agrigentum, which soon eclipsed the mother-city. The poet Æschylus died at Gela B.C. 456. *Syracuse* (Syracusæ), an ancient and famous city, at one time the largest and wealthiest in Sicily, founded by Corinthian colonists B.C. 734. At the time of its greatest prosperity it was 180 stadia or 22 miles in circumference, and is said to have had a population of 1,200,000 souls; was taken by the Romans B.C. 212, by the Saracens A.D. 878, and ruined by an earthquake in 1693; was the residence of Plato, Simonides, Zeno, and Cicero; the place where Hicetas first propounded the true revolution of the earth; and the birthplace of Archimedes, Theocritus, and Moschus. The harbour is admirably adapted for a commercial emporium, but its trade is now nearly confined to a few exports of salt, oil, wine, and fish. *Catania* (Catăna), at the southern foot of Mount Ætna, now the third most important city in the island, was founded B.C. 730; fell into the hands of the Romans at the close of the first Punic war; has been repeatedly ruined by earthquakes and eruptions of the volcano, but always rebuilt in a superior style: the houses are built and the streets paved with lava; various manufactures of silk, and wares made of lava and amber; exports corn, macaroni, potatoes, olives, figs, raw silk, wine, soda, manna, cantharides, and snow from Mount Ætna; contains a university, founded in 1445. *Messina* (Messene and Messana), the most populous city in Sicily, except Palermo; founded at a very remote period by the Siculi, the earliest inhabitants of the island, who named it Zancle, (*i.e.* a Sickle), from the curved form of its harbour; became a place of great commercial activity until B.C. 396, when it was taken and destroyed by the Carthaginians. The harbour, which is well fortified, is one of the finest in Europe; considerable trade and steam communication with Naples, Marseille, and Malta; an active tunny and other fisheries, and manufactures of damasks and satins. *Paterno*, with hot chalybeate springs. *Lipari* exports pumice-stone to all parts of the world, also sulphur, nitre, sal-ammoniac, soda, capers, and fish. In the vicinity are fragments of Cyclopean walls.

PRINCIPALITY OF MONACO.—*Monaco* (Portus Herculis Monoeci), the capital of a small principality on the south coast of Nice, and under the protection of Sardinia, which maintains its garrison of 300 men. The prince resides here six months in the year, and at Paris the other six. It is fortified, has a palace, and two hospitals, and enjoys a healthy climate.

SAN MARINO.—*San Marino,* the capital of one of the smallest and most ancient states in Europe, which has an area of only 21 square miles, and a population of 7600 inhabitants, who are chiefly occupied in rural industry and silk-manufactures. It is situated on the Ausa, which enters the Adriatic at Rimini, and is surrounded on all sides by the Pontifical States.

8. **Capes.**—Cape Delle Melle and Point Venere, on either side of the Gulf of Genoa; Piombino and Argentaro, in Tuscany; Circello, west of the Pontifical States; Campanella, Licosa, Palinuro, and Vaticano, on west coast of Naples; Spartivento, Nau or Colonna, and Leuca, south of Naples; Otranto and Gargano, in the Adriatic; Passaro, San Vito, and Ras Culmo, in Sicily; Teulada and Carbonara, south of island of Sardinia.

9. **Islands.**—The Italian islands are arranged into four groups or clusters—viz. the Sardo-Corsican, Sicilian, Maltese, and Ponza groups.

The Sardo-Corsican Islands, separated from the mainland by the Tyrrhenian Sea, are chiefly Sardinia (the second largest island in the Mediterranean; area, 9167 square miles; population, 547,112); Corsica, which belongs to France; and Elba, to Tuscany. *The Sicilian Group,* which belongs to Naples, and nearly connects the Italian peninsula with the African coast, consisting principally of Sicily (the largest island in the Mediterranean; area, 10,556 square miles; population, 2,091,580); the Lipari Islands (Stromboli, Lipari, Vulcano, &c.), Ustica, Favignana, and Pantellaria. *The Maltese Group,* belonging to Great Britain, and consisting of Malta, Gozo, and Comino. *The Ponza Group,* W. of Naples, chiefly Ponza, Ischia, and Capri.

10. **Seas, Gulfs, and Straits** (all forming parts of the Mediterranean)—viz., 1. *Seas:* the Tyrrhenian Sea, between Italy and the Sardo-Corsican Islands; Ionian Sea, between Italy and Greece; Adriatic, between the Italian and Hellenic peninsulas. 2. *Gulfs,* of Genoa, Gaeta, Naples, Salerno, Policastro, and St Eufemia, on the west side; of Squillace and Taranto on the south, of Manfredonia and of Venice in the Adriatic. 3. *Straits,* of Messina, between Naples and Sicily; Piombino, between Tuscany and Elba; Bonifacio, between the islands Corsica and Sardinia; Otranto, between Naples and Turkey.

11. **Mountain-System.**—There are three great mountain-ranges in Italy: the first separates Italy from the rest of the continent; the second traverses the mainland, in the direction of its greatest length, and extends to the farthest extremity of Sicily; and the third stretches from N. to S. through the Sardo-Corsican Islands. The first and second are the two most important members of the great Alpine system described under "Europe," and repeatedly referred to under the corresponding sections of France, Switzerland, and Austria; but we subjoin here the principal Alpine ranges, with their respective extreme elevations, and enter more minutely into the other two, which belong exclusively to Italy.

THE ALPS PROPER, a huge crescent-shaped range, extending as a whole from Nice to Vienna, bounding Italy on the N.W. and N., and separating the basin of the Po from those of the Rhone, Rhine, and Danube. The portions belonging to Italy are the following:—

Maritime Alps, between Piedmont and Nice, and between the basins of the Po and Var. Highest summits—

	Feet.
Col de Tende, ...	5,889
Col de Maurin, ...	9,786
M. Viso, ...	13,600

Cottian Alps, separating Piedmont from France, and the basin of the Po from that of the Rhone—

	Feet.
M. Pelvoux, culminating-point of France, .	14,108
M. Genèvre, ...	11,785
M. Cenis, ...	11,715

Graian Alps, between Piedmont and Savoy, and between basins of Po and Rhone—

	Feet.
M. Iseran, ...	13,282
Little St Bernard, ...	9,600

Pennine Alps, between Piedmont and Switzerland, and between the Po and Upper Rhone, and containing—

	Feet.
M. Blanc, the culminating-point of the Alps, .	15,744
Great St Bernard, ...	11,080
M. Cervin, ...	14,771
M. Rosa, culminating-point of Switzerland,	15,208

Helvetian or Lepontine Alps, extending into Switzerland, and separating the head-waters of the Po, Rhone, and Rhine—

	Feet.
The Simplon, ...	11,510
St Gothard, ...	10,900

Rhætian Alps, between Lombardy and the Tyrol, and between the Po and Danube—

	Feet.
Splügen, ...	9,350
Ortler Spitz, culminating-point of Austria, .	12,811
Gross Glockner, ...	12,425

Carnic Alps, between the Government of Venice and the Tyrol, and between the Piave and Drave—

	Feet.
La Marmolata,	11,500
M. Terglou,	9,380
Elevation of snow-line in the Alps,	8,900

The higher Alps are covered with perpetual snow. From these snow-beds enormous *glaciers*, or masses of ice, possessing considerable hardness and transparency, descend through the mountain-gorges, with a very slow, regular motion, sometimes far beneath the limit of cultivation. The number of glaciers in the entire Alpine system has been estimated at 400, covering an area of 1400 square miles, and originating many important rivers.—(See under "Switzerland.")

THE APENNINES commence at the Maritime Alps, near Genoa—extend in a S.E. direction through the entire length of the peninsula (a distance of about 800 miles)—then reappear in Sicily, which they traverse in a westerly direction from Messina to Cape San Vito, attaining in Etna their maximum elevation. They thus form the back-bone of the country, and the great watershed which divides the basin of the Tyrrhenian Sea from the united basins of the Po, the Adriatic, and Ionian Sea. They are of greatly less elevation than the Alps, and nowhere fully attain to the limit of perpetual congelation, except in Sicily, though some of the continental summits are covered with snow for nine months in the year.

Continental Apennines.—The highest summits, commencing at the north, are the following:—

	Feet.
Monte Cimone, between Modena and Tuscany,	6,975
Monte Corno, or Gran Sasso, in the N. of the kingdom of Naples, and highest point in the peninsula,	9,521
Monte Majella (lat. 42° 12′),	9,113
Monte Velino, N. of L. Fucino,	8,180
M. Vesuvius (an outlier, near Naples),	3,948

Sicilian Apennines, in the N. of Sicily—

	Feet.
M. Ætna, the culminating-point of the system, near the east coast,	10,874
M. Cuccio, near Palermo,	10,871
Line of perpetual congelation in Sicily,	9,500

THE SARDO-CORSICAN SYSTEM, in the islands Corsica and Sardinia, forms the watershed between the Tyrrhenian Sea and the Mediterranean proper, and extends from Cape Corso in the former island to Cape Teulada in the latter. The culminating-point of the range is in the northern island, where it barely reaches the limit of perpetual snow.

	Feet.
Monte Rotondo, in Corsica,	9,068
Monte Genargentu, in Sardinia,	7,000
Snow-line in lat. 42° 30′, about	9,500

Mountain-Passes.—The most frequented of these are the following:—

Col di Tende, in the Maritime Alps, 5890 feet above the level of the sea, and leading from Coni to Nice.

Pass of Mont Genèvre, in the Cottian Alps, 6560 feet, from Susa to Briançon.

Pass of Mont Cenis, from Susa to S. Jean de Maurienne, in Savoy, 6775 feet.

Pass of Great St Bernard, 8150 feet, between Piedmont and the Valais.

Simplon Pass, 6592 feet, from Milan and Domodossola to Canton Valais.

For the remaining passes across the Alps, see under "Switzerland" and "Austria."

12. **Principal River-Basins.** — Owing to the peninsular character of the country and the position of the mountain-chains, there is only one very extensive river-basin in all Italy, viz. that of the Po, which is limited by the Alps on the one side, and the Northern Apennines on the other; and embraces (if we include the rivers which flow into its delta from the N.) one-fourth of the entire area of Italy, together with five out of its ten capitals. The areas of the other basins named in the table remain undetermined.

River-Basins.	Total Length in English Miles.	Area in Geog. Square Miles.	Capitals.
Po, ...	340	29,950	Milan, TURIN, MODENA, PARMA, Venice (on the *Brenta*).
Rhone, ...	534	28,160	Chambery.
Arno, ...	75	...	FLORENCE.
Tiber, ...	185	...	ROME.

13. **Table of Rivers and Towns.**—Omitting the Austrian province of Venice, Italy contains three hundred and thirty-five towns of more than 5000 inhabitants: of this number seventy are above 10,000; forty-five above 20,000; eleven above 50,000; and seven above 100,000. These stand on 124 rivers, one-third of which are main rivers, and the remainder tributary streams. Capitals of States are in the following table distinguished by being printed in SMALL CAPITALS; towns above 10,000 inhabitants in Roman letters; and those between 5000 and 10,000 in *italics*:—

Basins inclined to the Tyrrhenian Sea.

Rivers.	*Towns.*
Paglione,	Nice.
South Coast of Nice,	MONACO, *Mentone, Vintimiglia.*
G. of Genoa,	*San Remo,* Porto Maurizio, Oneglia, *Alassio, Albenga, Finale,* Savona, *Varaggio,* Genoa, Chiavari, *Levanto,* Spezzia, *Lerici.*
Magra,	*Pontremoli.*
Avenza,	*Carrara.*
Frigido,	*Massa-di-Carrara.*
Serchio,	Lucca.
Arno,	Pisa, *Empoli,* FLORENCE, *Signa, Montevarchi, Poppi, Vinci.*
Era, *l*	*Volterra.*
Nievoli,	*Pescia.*
Elsa, *l*	*Colle.*
Ombrone,	*Tizzana,* Pistoja.
Bisenzio,	Prato.
Chiana, *l*	Arezzo, Montepulciano, n.
Coast of Tuscany,	Leghorn or Livorno, *Piombino.*
Ombrone Senese,	*Grosseto.*
Arbia,	Siena.
Marta,	*Corneto, Bolsena.*
Arcone, *l*	Viterbo.
Co. Pontifical States,	Civita Vecchia.
Tiber,	ROME, Perugia.
Teverone, *l*	*Tivoli.*
Nera, *l*	Terni.
Velino, *l*	Rieti.
Paglia,	*Orvieto.*
Topia, *l*	*Foligno.*
Chiasco,	Gubbio, n.
Marogia, *l*	*Spoleto.*
Astura,	*Astura,* Velletri, *Albano,* n.
Amasena,	*Terracina.*
G. of Gaeta,	*Fondi,* n., Gaeta.
Garigliano,	*Ponte Corvo,* Arpino, n., *Sora.*
Sacco,	*Anagni,* n., *Palestrina.*
Cossa, *l*	*Frosinone.*
Savone,	*Teano.*
Volturno,	*Capua, Isernia,* n.
Calore, *l*	Benevento, Ariano, n.
Sabbato, *l*	*Atripaldi,* Avellino.
Lagni,	Caserta, n., Aversa, n., Acerra, *Nola.*
G. of Naples,	Pozzuoli, NAPLES, *Portici,* Castellamare, Sorrento; *Ruins of Herculaneum and Pompeii.*
Sarno,	*Nocera,* Sarno, n.
G. of Salerno,	*Amalfi,* Salerno; *ruins of Pæstum.*
Sele,	*Buccino, Sala.*
G. of Policastro,	*Policastro, Lagonegro.*

Basins inclined to the Tyrrhenian Sea (continued).

Rivers.	*Towns.*
West Co. Calabria,	Nicastro, n., *Pizzo, Paola, Gioja, Palmi.*
St. of Messina,	*Scylla,* Reggio.

Basins inclined to the Ionian Sea.

East Co. Calabria,	Catanzaro, *Cotrone, Rossano.*
Crati,	Bisignano, *Cosenza.*
Sibari, *l*	*Cassano, Castro-Villari.*
G. of Taranto,	*Taranto, Nardo,* Gallipoli.
Agri,	*Marsico.*
Basente,	*Potenza.*
Bradano,	Matera, n., *Oppido.*
Gravina,	Altamura, n., Gravina.

Basins inclined to the Adriatic.

East Co. Otranto,	*Otranto,* Lecce, n., *Brindisi.*
Co. of Bari,	*Mola,* Bari, Molfetta, Trani, Barletta.
G. of Manfredonia,	*Manfredonia, Viesti.*
Ofanto,	Cerignola, n., *Minervino,* n., Melfi.
Cervaro,	*Bovino, Troja,* n.
Carapella,	*Ascoli.*
Cesone,	Foggia.
Salsola, *l*	Lucera.
Radicosa,	San Severo.
Biferno,	*Campo-Basso.*
Trignio,	*Isernia,* n.
Sangro,	*Atessa.*
Co. Abruzzo,	*Vasto,* Lanciano, n., Ortona.
Pescara,	Chieti, Sulmona, Aquila.
Piomba,	*S. Angelo, Atri.*
Trontino,	Teramo.
Tronto,	Ascoli, *in the Papal States.*
Fermo,	Fermo.
Chienti,	Tolentino, Camerino.
Potenza,	Recanati, Macerata.
Musone,	Loreto, Osimo.
E. Co. Pontif. States,	Ancona.
Esino,	*Jesi, Fabriano.*
Misa,	*Sinigaglia.*
Metauro,	*Fano, Urbino,* n.
Foglia,	Pesaro.
Ausa,	Rimini, SAN MARINO.
Rubicon,	*Savignano.*
Savio,	*Cervia,* n., *Cesena.*
Montone,	Ravenna, Forli.
Lamone,	Faenza.
Santerno,	*Comacchio,* Imola.
Reno,	Bologna.

Basins inclined to the Adriatic (continued).

Rivers.	*Towns.*
Po,	Adria, Ferrara, *Revere, Guastalla,* Viadana, *Sabionetta,* n., Casal-Maggiore, Cremona, Codogno, Piacenza, Pavia, *Valenza,* Casale, *Trino, Crescentino, Chivasso,* TURIN, *Moncaglieri, Carignano,* Carmagnola, *Villafranca, Cavor,* n., Saluzzo, n., *Barge.*
Panaro,	*Finale.*
Secchia,	Gonzaga, MODENA.
Mincio, *l* (Lake di Garda),	Mantua, *Villafranca, Lonato, Salo, Riva.*
glio, *l* (L. Iseo),	*Bozzolo, Pontevico, Soresina, Chiari.*
Chiesi, *l*	*Castiglione,* n., *Montechiaro.*
Mella, *l*	Brescia.
rostolo,	*Guastalla,* Reggio.
arma,	PARMA.
aro,	*Borgo-San-Donino,* n., *Borgo Taro.*
dda, *l* (L. Como),	Lodi, *Treviglio,* n., *Lecco,* Como, *Canzo, Sondrio, Bormio.*
Serio, *l*	*Crema, Caravaggio, Clusone.*
Brembo, *l*	Bergamo, n.
ebbia,	Piacenza.
mbro, *l*	*San Colombano, Borghetto,* Monza.
ona, *l*	MILAN, Busto-Arsizio, n., *Varese.*
ino, *l* (L. Maggiore),	Pavia, *Binasco,* n., Vigevano, *Abbiate-Grasso,* n., *Trecate, Intra, Locarno,* BELLINZONA.
Toccia or Tosa,	*Domodossola.*
Tresa, *l* (L. Lugano),	*Lugano.*
rdoppio, *l*	Novara, *Oleggio.*
ffora,	Voghera.
gna, *l*	*Mortara,* n., *Borgo-Manero.*
ivio,	*Cas. Nuova,* Tortona, Novi.
aro,	*Marengo,* Alessandria, *San Salvatore,* Asti, *Alba,* Bra, Cherasco, *Bene,* n., *Garessio.*
ormida,	*Acqui.*
Orbe,	*Castellazzo, Gavi, Ovada.*
elbo,	*Nizza-Monferrato.*
tura, *l*	Fossano, Coni, *Demonte.*
esio, *l*	Mondovi, n., *Chiusa.*
a, *l*	Vercelli.
ervo,	*Biella.*
a-Baltea, *l*	*Caluso, Ivrea, Aosta.*
a, *l*	*Chivasso, Locana.*
a-Riparia, *l*	TURIN, *Rivoli, Susa.*
gone, *l*	*Giaveno.*
ra,	*Sommariva del Bosco,* Raconigi, Savigliano, *Busca.*
one, *l*	Pinerolo.

Basins inclined to the Adriatic (continued).

Rivers.	*Towns.*
Adige,	Rovigo, *Lendinara, Legnago,* Verona, *Roveredo,* Trient or Trent, *Meran, Glurns.*
Agno, *l*	*Este.*
Eisach,	Botzen or Bolzano, *Brixen* (near the Brenner Pass, leading from Italy to Germany.
Bacchiglione,	Chioggia, Padua, Vicenza, *Tiene, Schio.*
Brenta,	VENICE, n., *Mestre, Cittadella,* n., Bassano.
Sile,	Treviso.
Piave,	*Conegliano,* n., *Feltre, Melo,* Belluno.
Meschio, *l*	*Serravalle.*
Livenza,	*Sacile.*
Tagliamento,	*Latisana, Venzone, Tolmezzo.*
Isonzo,	*Aquileja,* n., *Gradisca,* Goritz or Görz.
Roja,	*Palmanora,* Udine.
Idria, *l*	*Idria* (see under "Austria" and "Turke").

14. **Lakes.**—Italy is studded with many beautiful lakes, espially the basin of the Po, near the foot of the Alps, where lakes Garda, Como, Maggiore, &c., are unrivalled for their enchanting scnery. They are numerous also in Central Italy, between the branes of the Apennines, where they sometimes occupy the craters of tinct volcanoes (as Lake Averno, 10 miles west of Naples), and hve no visible outlet. The following are the principal lakes in the oler of the river-basins in which they occur :—

Basin of the Po—*Garda,* drained by the Mincio ; *Iseo,* by the glio ; *Como,* by the Adda ; *Maggiore,* the largest, 40 miles long by 2road, by the Ticino ; *Lugano,* by the Tresa, a tributary of the Ticino

Rhone—*Geneva ; Bourget* and *Annecy,* in Savoy, drained by the vière and Fieran respectively.

Ombrone—*Castiglione* and *Orbitella,* in the Maremma of Tuscany

Arone—*Bracciano,* in Pontifical States.

Marta—*Bolsena,* in Pontifical States.

Tiber—*Perugia,* has no visible discharge.

Garigliano—*Celano* or *Fucino,* in N. of Naples, drained by an aficial channel; *Averno,* 10 miles W. of Naples, occupies the crat of a volcano.

15. **Climate.**—From its position, form, and configuration Italy enjoys an extremely delightful climate, which permits the pductions of the temperate, and some of the torrid zone, to mingl n its almost uniformly fertile surface. In the northern parts the ld is sometimes severe ; but it is little felt in the centre and south, here the plains enjoy an almost perpetual spring. The valley of e Po considerably resembles in temperature the central parts of Fnce : the lakes freeze in winter, and the orange and lemon w not ripen in the open air. At Rome frost seldom lasts over theght,

and snow falls, on an average, on only two days in the year, as also at Florence, Naples, and Palermo. At Venice snow falls on five days annually, at Milan on ten, while in Malta snow-flakes are never seen.

TABLE OF MEAN ANNUAL TEMPERATURE, ETC.

	Annual Temperature.	Winter Temperature.	Summer Temperature.
Milan, ...	55°2	36°	73° Fahr.
Venice, ...	55.4	38	73
Florence, ...	59.2	43.8	74.6
Rome, ...	59.3	44.5	75
Naples, ...	59.6	47.6	73.1
Palermo, ...	63.1	52.5	74.4
Malta, ...	75.5 (Sep.)	57 (Jan.)	...

The higher Alps are covered with perpetual snow, above the level of 8900 feet. Nearly one-half of Mont Blanc (7000 feet) is always protected by a snowy envelope, which thickens every winter by fresh accumulations, and contracts again in summer and autumn by the action of the sun's rays, and by the constant discharge, from its lower margin, of those famous glaciers which are the admiration of all travellers.—(See under "Switzerland.") The climate is, generally speaking, highly salubrious, save in the pestilential marshes of Tuscany, called the *Maremma,* and the *Campagna di Roma,* in the Pontifical States, the malaria from which is extremely injurious to human life. The prevailing winds are W. and S.W., and during their continuance the air is pure and healthy; but the southern portion of the country is frequently visited by the pestilential winds of Africa, during which vegetation is arrested, and the human frame becomes languid and feeble.

16. **Geology.**—Tertiary and post-tertiary strata cover greatly more than a half of Italy, especially the extensive basin of the Po; the northern portion of the peninsula from Genoa to Civita Vecchia on the west side; and the entire belt lying between the Apennines and the Adriatic on the E.; together with a large part of Sicily and Malta. Secondary strata occupy considerable areas in central and southern Italy, especially from the Tiber to the Gulf of St Eufemia; a large tract in the centre of Sicily; and the southern slope of the Rhætian and Carnic Alps. The central and higher ridges of the Alps consist of gneiss and other primary rocks, flanked by limestone, sandstone, and slate; and primary strata prevail on both sides of the Strait of Messina, and in the east side of Corsica and Sardinia. Granite rarely occurs except in the islands just named, where it covers large areas. Trap-rocks are found in numerous small patches around the Gulf of Genoa and N. of the Po; and volcanic formations are extensive, especially around Rome, Naples, Malfi, the E.

side of Sicily, and the N.W. corner of the island Sardinia, more particularly in the neighbourhood of Syracuse and Mount Etna, as also in the Lipari Isles, where Stromboli, Vulcano, and Vulcanello are still active volcanoes.

MINERALS.—The mineral products of Italy are very numerous and abundant, but not extensively wrought. The principal minerals in the different States are the following:—

Venice.—Copper, iron, lead, arsenic, marble, alabaster, potter's clay, coal, and precious stones. The principal mineral springs are those of Albano, Rovere, Recoaro, and Piano.

Sardinia.—Iron, lead, copper, manganese, cobalt, marble, sulphur, coal, salt, and small quantities of the precious metals. The mineral springs of Aix, near Chambery, are celebrated, as also those of Bormio, Messino, and Trescorre in Lombardy.

Parma.—Minerals unimportant except salt, which is extensively manufactured. Some iron and copper; lithographic stones, mill-stones, whetstones, beautiful marble, and fine rock-crystals.

Modena.—Iron and marble.

Tuscany.—Celebrated for its mineral riches, and the number of its mineral and thermal springs; especially iron (in Elba), copper, argentiferous lead, sulphur, mercury, alum, coal, statuary marble, alabaster, and borax near Volterra.

Pontifical States.—Mines of iron, lead, sulphur, salt, alum, vitriol, and other volcanic products; but, with the exception of the sulphur-mines of Rimini, not extensively wrought, and not very productive.

Naples.—Beds of rock-salt in Calabria, sulphur very abundant in the volcanic region, and largely exported; alum and saltpetre in several localities, besides excellent marble and lava used for building and paving. In *Sicily* the sulphur-beds, which occur in the tertiary strata, are of great value and extent: they are found everywhere in the centre and south of the island, covering an area of 2700 square miles. About 150 mines are wrought, some by an English company, as at Riesi, and the yield is annually increasing. The other minerals of the island are alum, nitre, salt, bitumen, gypsum, and marble; ores of copper, lead, iron, and mercury are found in the mountains, but they are little wrought, and nearly all metallic goods are imported.

The *Island of Sardinia* contains gold, silver, lead, and other metals.

Apennines and Alps.—The celebrated marble of Carrara, Serravezza, and Siena, constitutes the chief mineral riches of the former; but iron is found in small quantities, and extensive saline deposits occur near Cosenza. The principal minerals of the Alps are iron, copper, lead; but quicksilver, rock-salt, and some gold and silver are met with.

17. **Botany.**—The indigenous vegetation of Italy, including the Alpine region in the N., is wholly embraced within Schouw's *first* and *third* phyto-geographic regions. The first or *Arctic-Alpine Region*, comprehends all the countries in Europe and Asia enclosed within the Arctic Circle, together with the summits of the lofty mountain-ranges of Western and Southern Europe. The third or Mediterranean Region embraces Italy, Spain, Greece, Asia Minor, Syria, and Africa, N. of the Sahara.—(For the characteristic vegetation of these regions see "Europe," art. 18.) Italy, as a whole, presents an admirable epitome of the characteristic floras of all the countries of Europe,

Western Asia, and Northern Africa. According to Cesati, the number of flowering-plants in Lombardy alone amounts to 2568 species, of which 514 are monocotyledons, and 2054 dicotyledons.

In Sicily, Naples, and Malta, in addition to the plants common to all the peninsula, not a few tropical species appear, such as the cotton-plant, sugar-cane, papyrus, pistachio, and date-palm. The Indian fig also, a species of cactus, grows wild in Sicily. All these ripen at an elevation of about 600 feet; evergreens flourish at 2000 feet; the oak and chestnut grow on the mountain-sides as high as 4000 feet; wheat thrives at 4500 feet; and the beech at 6000 feet. In Central Italy we find the flanks of the Apennines covered with a rich and varied vegetation up to 3200 feet; the lower zone is occupied by the orange, citron, olive, and palm; forests are rare; and the mountains, above the level indicated, present bare rocks devoid of vegetation. The Alps afford excellent pasture, and the forests contain a great variety of timber. The vertical limits of vegetation along their sides are as follows:—The dwarf-palm and orange arrive at maturity at the foot of the Maritime Alps; wheat is cultivated at the height of 3600 feet; oats, 4300 feet; barley, 5100 feet; the chestnut grows in the valleys at 3600; oak, 4500; pine and larch, 6500 feet. Human inhabitants are found as high as 6300 feet, where potatoes and turnips are the only esculents. The zone lying between the upper limit of trees and the lower limit of perpetual snow is the province of the *Alpine flora* above alluded to, characterised by the juniper, alder, rhododendron, willow, cranberry, saxifrages, mosses, and lichens, extending to 8900 feet.

AGRICULTURE.—Were the Italians as active, industrious, and skilful as their soil is good and their climate propitious, few countries in the world could rival Italy in agricultural wealth and prosperity. So far, however, is this from being the case, that there is scarcely a country on the continent which does not leave it behind in all matters connected with successful husbandry. The most important exceptions to this are Lombardy and Sardinia, where the industry of the inhabitants is less unworthy of the rich soil and serene sky which they enjoy.

Lombardy and Venice.—Soil a rich alluvium, abounding in marine deposits; cultivated with great care, and the system of irrigation the most complete in Europe, producing rice, maize, wheat, rye, oats, and barley; celebrated for cheese; hemp and flax excellent; wine of rather inferior quality.

Sardinia.—The soil of the mainland, especially in Piedmont, of great natural fertility, which is greatly increased by careful and skilful management. Principal crops—rice, maize, wheat, chestnuts, vines, olives, figs, oranges, and citrons; the silk produced is the best in Italy, and mules are extensively reared.

Island of Sardinia.—One-third of the surface consists of barren and stony deserts; forests extensive, and affording excellent timber: agriculture conducted in the rudest manner, but wheat, barley, and pease are to some extent exported, together with large quantities of cheese; the olive of inferior quality, but vines increasingly cultivated.

Parma.—In the plains the soil is fertile and irrigated by numerous canals, producing maize, wheat, tobacco, rice, wine, and fruits.

Modena.—The soil generally fertile, especially in the plains, and cultivated with considerable industry, but less skill: much attention paid to the culture of the vine, olive, and mulberry; the orange and olive flourish vigorously in the open air on the south side of the Apennines. Crops—rice, maize, hemp, besides the ordinary cereals.

Tuscany.—Agriculture so imperfectly conducted that the corn raised is insufficient for home consumption, though the valley of the Arno has long been regarded as the garden of Italy; the mountaineers are obliged to live chiefly on chestnuts. Principal crops are maize, wheat, rye, and barley; the culture of the olive is prosecuted with great care, and Florence oil is celebrated; wines of inferior quality; the mules and sheep are of superior breeds, and herds of cattle find rich pasture in the drained portions of the Maremma.

Pontifical States.—Soil generally fertile, but much neglected, and only one-third under cultivation: agriculture in a very backward state: much of the surface affords excellent pasture, which sustains large herds of buffaloes; sheep and horse are extensively reared, and great numbers of swine roam in the forests of the Apennines. Crops—wheat, maize, oats, barley, rye, pulse, hemp, wine, oil, tobacco in the N.; and sugar, indigo, and cotton in the S. Cork-trees numerous; chestnuts form a considerable article of food; wines of an inferior quality.

Naples.—Soil volcanic, well watered, and extremely fertile. On the lower grounds vegetation is never interrupted. Agriculture in a very backward state; chief crops—wheat, maize, cotton, melons, rice, oil, wine, hemp, lint, tobacco, and fruits; also the sugar-cane, pistachio, and dates. The wine produced is the best in Italy: the celebrated *Lacryma Christi*, a red wine of great excellence, is grown in vineyards on the flanks of Vesuvius. Other products are oranges, lemons, saffron, manna. *Sicily* has not unjustly been called the Queen of the Islands of the Mediterranean; its fertility and productive powers in ancient times were almost incredible, and the grain was so abundant that the island was called one of the granaries of Rome; it also produced excellent wine, olives, honey, almonds, and many other southern fruits. Though its fertility and fair sky remain still the same, its exports are greatly diminished, consisting chiefly of fruits, wine, oil, and small quantities of wheat and barley There are few countries in which agriculture is conducted with less skill, owing mainly to the oppressive exactions and restrictions of the Government. Chief crops—wheat, barley, maize, rice, wine, oil, oranges, lemons, almonds, potatoes, flax, hemp, sumach, liquorice, and manna. Pastoral industry receives little attention, and all kinds of live-stock are inferior.

18. **Zoology.**—There seem to be few, if any, wild animals peculiar to the Italian peninsula, unless the crested hedgehog, found in the south of Naples, be an exception. On the other hand, however, few species are wanting here of those found in the other parts of Southern Europe.

The MAMMALIA are 68 in number, embracing 42 carnivora, 16 rodentia, 1 pachyderm, and 9 ruminantia. The ruminants embrace the buffalo, three species of deer, the goat, and two species of sheep; the rodents—three species of hare, the dormouse, numerous mice, the squirrel, hedgehog, and arvicola. The wild boar, the only thick-skinned animal in Europe, is met with in the forests of Calabria. The carnivora include 22 species of bat, the hedgehog, shrew, desman, mole, bear, badger, marten, dog, wolf, fox, civet, and wildcat.

Of the 294 species of BIRDS found in Southern Europe, no fewer than 247 are met with in the vicinity of Rome; and of these 60 are said to be common to America. Numerous species occur that are unknown in the British Isles, among which the rose-coloured starling, the blue thrush, the hoopoe, wall-creeper, and slender-billed vulture, are the most remarkable.

REPTILES of every order are numerous, amounting in all to 47 species: they abound especially in the kingdom of Naples, while the rivers and lakes abound with fish; and some of the fisheries established on the coast—especially those of the tunny, anchovy, pilchard, and mackerel—are of great value. Of the 8000 known species of FISH, 444 belong to the Mediterranean, and the great majority of these exist in the Italian seas.

MOLLUSCA and ARTICULATA.—The articulated animals embrace numerous insects, including the bee and silk-worm, both of which are of great value; the tarantula, scorpion, and white ant, all highly noxious; the locust, which not unfrequently makes its appearance in devastating swarms; and the butterflies, remarkable for the number and beauty of the species. The molluscs, crustaceans, echinoderms, sponges, and corals of the Mediterranean are very numerous, but seldom differ specifically from those of the Lusitanian and West African regions, from the former of which, especially, its fauna appears to have been a colony.*

19. **Ethnography.**—With the exception of Greece, Italy was the first European country that attained to any considerable degree of civilisation. Notwithstanding the patient and laborious researches of modern ethnologists, considerable doubt still attaches to the question of its original inhabitants; though it is generally acknowledged that they belonged to the same great family of nations as the Greeks—both being descendants of the Pelasgi, a people of Northern India, who formed the first great wave of population that broke on the shores of S.E. Europe, and that permanently covered Asia Minor, Thrace, Macedonia, Greece, and Italy. This immigration appears to have commenced as early as about B.C. 2000, and to have been continued at intervals to about B.C. 1350. They must have entered Italy from the north, and have advanced southward as they were pushed on by fresh bodies of immigrants.

According to this view, the first inhabitants of Southern Italy were the most ancient in the peninsula; and these are the people who are known in history as the Siculians, Tyrrhenians, and Pelasgi. Next in point of antiquity were the inhabitants of Latium and the other parts of Central Italy, whose languages, though not identical, appear to have been only dialectically different from each other, and closely allied to those of the Siculi, or first inhabitants. All these languages ultimately merged in the Latin, one of the most copious and refined of the great

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* The Lusitanian region of marine life embraces the eastern side of the Atlantic from the N.W. of France to the Canary Isles, and lies between the Celtic and African regions.—(See under "British Isles," art. Zoology.)

Indo-European family of tongues, and the twin-sister of the still nobler Greek.—(See under "Europe," p. 95.)

In the valley of the Po we first find the Etruscans, who had likewise descended from the Alps, but who were subsequently driven forward (by the Gauls or Celts, who took possession of that territory) into the country now known as Tuscany, whose former inhabitants, the Tyrrhenians, they reduced to bondage. Who the Etruscans were, remains a question of the greatest uncertainty; for though numerous inscriptions belonging to that people have been found, they remain wholly unintelligible. There are certain indications, however, that their language was a branch of the Indo-European group, and therefore allied, however remotely, to the Celtic, Teutonic, Sclavonic, and Greco-Latin families. From the numerous remains of their works of art, there can be no doubt but they had attained to a high civilisation while Rome was still in her infancy. Lastly, in the N.W. of Italy (the modern Piedmont) were the Ligurians, whose origin is also uncertain, some writers supposing them to be Celts, others Iberians, and others still Pelasgi.*

Subsequent to the dawn of authentic history, the southern portion of the peninsula was colonised from different parts of Greece, and was, in consequence, named Magna Græcia; but the Grecian immigrants, in common with all the other nations above enumerated, came in the course of time to lose their original languages, and, in the reign of Augustus, Latin was the spoken language of Italy from the one extremity of the peninsula to the other.

In the fifth century the Goths invaded Italy, and overthrew the Roman Empire; and in 570 the Lombards seized the north, and founded the kingdom of Lombardy.

Language.—The Italian language, notwithstanding the infusion of so many foreign elements, stands more closely allied to the ancient Latin than any other Greco-Roman tongue. Of its numerous dialects, which not unfrequently differ very widely from each other, the Tuscan is the most refined and harmonious. Not only is it spoken by the educated classes in all parts of the peninsula, but for a lengthened period it has been the almost exclusive vehicle of Italian literature.†

Religion.—The entire population of Italy belongs to the Roman Catholic Church, with the exception of 25,000 Waldensian Protestants in the kingdom of Sardinia, who, after ages of unrelenting persecution, are now allowed freedom of worship in all parts of the country. Jews are also numerous in the large towns, especially in Rome, Leghorn, and Venice; and there are a few Greeks in the two cities last mentioned.

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* We need scarce remind the classical student that the traditions recorded by Virgil and other Roman writers relative to an immigration from Arcadia under Evander, and another from Troy under Æneas, into Italy, are wholly destitute of historical foundation. On the whole subject of the aboriginal inhabitants of Italy we cannot do better than refer him to Smith's "Classical Dictionary of Biography, Mythology, and Geography," and Dr Schmitz's admirable "Manual of Ancient Geography," to both of which we have been frequently much indebted.

† The inhabitants of Savoy belong to the French family of nations, and speak the French language; but Corsica, which belongs to France, employs a dialect of the Italian.

Education.—The people are in general the most ignorant in Europe, notwithstanding the existence of half a million of priests, or one to every fifty of the population. Few of the peasantry can either read or write, and even in the large towns the great majority of artisans cannot record their own names.

The *Neapolitan territories*, especially, are in a state of savage ignorance, there being no schools for the lower classes, and such seminaries of instruction as exist being in the hands of an ignorant priesthood. Sicily has her two universities—those, viz., of Palermo and Catania, besides colleges and academies in twenty-one towns, and primary and secondary schools in each commune; yet the people are in the grossest ignorance. The *Pontifical States* are only one degree better in this respect than Naples. Schools, indeed, are not wanting, but they are conducted with extreme inefficiency. Instruction is gratuitous, but very limited—provision being made for only one in every fifty of the population. The only universities in the Roman States are, the University of Rome, founded in 1244, having 42 professors, with about 1000 students; and the University of Bologna, with 560 students in 1841. Besides these are the Collegio Romano, entirely under the direction of the Jesuits, who give instructions in the learned languages, theology, rhetoric, and natural philosophy; and the Collegio de Propaganda Fide, where missionaries, chiefly young foreigners, are trained to go forth for the conversion of foreign, or the recovery of Protestant, countries. *Tuscany* has three universities—one at Pisa, one at Florence, and another at Siena, besides a lyceum at Lucca; but primary instruction is very limited, and only one-ninth of those who ought to be at school are receiving regular instruction. *Sardinia* forms an honourable exception to the general character of Italian States in the matter of education. The Government pays great attention to the training of the children of the poor in elementary and industrial schools, while there are no fewer than four universities—viz. those of Turin, Genoa, Cagliari, and Sassari, which, in 1850, were attended by 3000 students; besides that of Pavia, in Lombardy, just acquired, which, in 1842, had 57 professors, 1484 students, and a library of 50,000 volumes.

20. **National Character.**—Thus the modern Italians are a mixed people, formed by the amalgamation of Pelasgic, Celtic, Greek, Teutonic, and other elements. They are described as "a handsome, lively, and intelligent people, with fine imagination, good taste, and great enthusiasm in the fine arts. The men are well formed, rather slim than stout, but strong and agile, with a dark complexion, expressive countenances, dark sparkling eyes, and, generally, black hair. The women have narrow foreheads, black or dark-brown hair, large, brilliant, and expressive eyes, a beautiful nose, which, with the forehead, forms the elegant Roman profile; but the lower classes, in consequence of early marriages, of living wholly on vegetable food, and of hard labour under a burning sun, rarely display any peculiar attractions. The national character, always marked by strong passions, has become dissembling and selfish through long-continued oppression. Crimes against life and property are frightfully numerous, and the nation may be said to be in the lowest state of demoralisation."

21. **Literature.**—From the splendid galaxy of literati which for ages has illumined this classic country, we can only instance a few of the most conspicuous stars :—

CLASSICAL LITERATURE. — Plautus, Terence, Lucretius, Cicero, Cæsar, Virgil, Horace, Livy, Ovid, Sallust, Nepos, Juvenal, Pliny, Tacitus, Quintilian.

SACRED LITERATURE. — Gregory the Great, Thomas Aquinas, Cajetan, Baronius, Bellarmine, Paolo Sarpi, Pallavicini, Martini, Diotati, De Rossi, Cardinal Mai.

POETRY.—Dante, Petrarch, Boccaccio, Pulci, Boiardo, Ariosto, Berni, Colonna, Guarini, Tasso, Metastasio, Alfieri, Foscolo, Parini.

HISTORY.—Platina, Machiavelli, Varchi, Davila, Guicciardini, Bentivoglio, Strada, Maffei, Muratori, Lanzi, Vasari, Denina, Tiraboschi, Farini, Vico.

PAINTING.—Cimabue, Leonardo da Vinci, Michel Angelo, Berretini, Battoni, all of the *Florentine School.* Raphael, Giulio Romano, Barocci, Sacchi, Claude of Lorrain, Poussin (Gaspard), of the *Roman School.* Titian, Paolo Veronese, Canale, of the *Venetian School.* Correggio, Caracci, Guido, Grimaldi, Colonna, of the *Lombard and Bolognese School.*

SCULPTURE.—Michael Angelo, Canova.

MUSIC.—Palestrini, Farinelli, Paganini, Lully.

SCIENCE AND PHILOSOPHY.—Cardan, Vanini, Galileo, Toricelli, Malpighi, Casini, Morgagni, Algarotti, Galvani, Volta.

TRAVELS AND DISCOVERY. — Christopher Columbus, Amerigo Vespucci, Marco Polo.

MISCELLANEOUS LITERATURE.—Poggio, Laurentius Valla, Politian, Pico Mirandola, Bembo, Aldo Manuzio, Scaliger, Marana, Gravina, Crescimbini, Facciolati and Forcellini, Beccaria, Filangieri.

22. **Government, &c.**—With the exception of Sardinia, which has enjoyed free institutions since 1848, all the Italian States have for generations been groaning under forms of despotism of the most extreme type. Civil and religious liberty is wholly unknown. Freedom of worship, freedom of speech, freedom of the press, and liberty of the subject, have been everywhere effectually suppressed ; and hence the oft-repeated attempts at insurrection on the part of the people, whose unquenchable love of freedom would long ere now have succeeded in wresting it from their rulers, were it not for the interference of Austria and France, who have invariably taken sides with the sovereigns against the people. Austria, in particular, has become the great champion of despotism ; for she not only rules her own Italian subjects with a rod of iron, but she is in league with every petty despot in the peninsula to aid him in extinguishing the last sparks of freedom in the national mind.

Army and Navy.—Omitting from present consideration the immense armaments which Austria maintains in Venice, every important city of which she has strongly fortified, the military and naval forces of the other states amounted in 1858 to the following numbers respectively :—

STATE.	Army.	Navy.		Cost of Army & Navy.
		Ships.	Guns.	
Sardinia, ...	47,915	29	436	£1,502,096
Parma, ...	5,672	...	...	...
Modena,..............................	14,656	...	...	...
Tuscany, ...	17,209	(land and sea)		256,352
Pontifical States, ...	15,255	...	...	375,719
Two Sicilies, ...	92,586	121	746	...

The *Revenue*, *Expenditure*, and *Public Debt* were as follows :—

STATE.	Year.	Revenue.	Expenditure.	Public Debt.
Sardinia, ...	1858	£6,041,407	£6,197,880	£28,209,176
Parma, ...	1858	142,750	112,750	592,000
Modena, ...	1858	350,567	363,672	...
Tuscany, ...	1858	1,295,670	1,295,670	...
Pontifical States, ...	1858	2,932,000	2,904,000	15,233,000
Two Sicilies, ...	1856	5,271,000	5,324,939	20,000,000

23. **Commerce.**—The commerce of the Italian States is considerable, and is chiefly carried on with Great Britain, the south of Europe, and the Levant. From Britain they *import* cotton stuffs and yarn, together with iron, steel, hardware, coal, and various articles of colonial produce; wool from the Levant; corn from Odessa; wines from France and Spain; and salt-fish from the countries of north-western Europe. The chief *exports* are silk, olive-oil, hemp, wool, sulphur, borax, straw-plait, straw-hats, wines, oranges, lemons, oak and cork bark, charcoal, potash, coral, anchovies, macaroni, wax, liquorice, essences, perfumery, paper, musical strings, glass, marble, soap. The principal seats of the foreign commerce are Genoa, Leghorn, Civita Vecchia, Ancona, Naples, Palermo, and Messina.

24. **Manufactures.**—The principal manufactures of the four larger states are the following :—In the Sardinian dominions, as indeed generally throughout Italy, silk fabrics of an excellent quality are extensively

made, especially in Lombardy and Piedmont, where they give employment to a great number of persons. Less important manufactures are glass, cotton, coarse woollen and linen goods, sugar-refining, and coral ornaments. The manufactures of Tuscany are mainly silk and paper, both of which are of excellent quality; straw-plait and straw-hats, though greatly reduced in quantity, still form important articles of industry; other branches are glass, crystal, articles in marble, alabaster, iron, brass, porcelain, coral. In the Papal States, manufacturing industry is for the most part confined to the large towns, and consists of articles for home consumption, as silks, leather, gloves, paper, musical instruments, iron and glass wares, cotton cloth, crape, cordage, soap, cream-of-tartar, and wines. Mining is also carried on to a limited extent, but, with exception of the sulphur-mines near Rimini, they are scarcely remunerative; but salt to the amount of 84,000,000 lb. annually is prepared in the lagoons that line the coast. The fisheries that exist are for the most part conducted by Neapolitan seamen. Manufactures have not made much progress in the Kingdom of Naples. In some places, as at Catania, Palermo, and Messina, large factories exist, but in general artisans work at home. The most important industrial product is silk, which is not only spun, but woven into excellent fabrics. The other principal articles are woollens, linens, hosiery, straw-hats, sausages, and macaroni. The most important foreign products are excluded by enormous duties, and trade of all kinds is cramped and almost destroyed by barbarous regulations. In 1851 the Neapolitan mercantile marine included 10,568 vessels, with a tonnage of 221,749.

25. **Internal Communication.**—Owing to the want of energy on the part of the people, their abject poverty, and the innumerable discouragements to which they are subjected by their rulers, the great thoroughfares of commerce are in a very backward condition.

Till very recently RAILWAYS were almost unknown in the peninsula, and it is only in Sardinia and Austrian Italy that they have yet been constructed to any great extent. Omitting Lombardy, the railways of which are noticed under Austria, the total number of miles open for traffic in 1858 was 700—being for Sardinia 390 miles, for Parma and Modena 96 miles, for Tuscany 150 miles, and for Naples (in 1848) 64 miles. The principal lines were as follows:—

Turin to Vercelli and Milan, with a branch from Novara to Arona.

Turin to Susa, at the foot of the Cottian Alps, intended to unite with the French railway from Lyon to Grenoble.

Turin to Pinerolo, near Mont Genèvre.

Turin to Coni, at the foot of the Maritime Alps.

Turin to Alessandria and Genoa, with branches to Novara and Broni.

Piacenza (on the Po) to Parma, Modena, Bologna, and Pistoja in Tuscany, with a branch from Modena northward to Mantua and Verona.

Florence to Pistoja, Lucca, Pisa, and Leghorn.

Florence to Siena and Fojana, with a branch from Empoli to Pisa.

Rome to Frascati, 12 miles S.E.

Naples to Nocera and Salerno, with a branch to Castellamare.

Naples to Capua, with a branch to Nola.

CANALS.—Lombardy abounds with canals, but they are mostly used for the purposes of irrigation, the principal exceptions being the canal from Milan to the Ticino, and from Milan to the Adda. In Tuscany there is a short canal from Pisa to Leghorn, another from Pisa to the Serchio, uniting the Arno with the Serchio; and a third, named the Chiana Canal, 37 miles in length, uniting the sources of the Arno and Tiber.

ROADS.—In Venice and the Sardinian dominions, the roads are well constructed and kept in good repair; but in central and southern Italy they are in a most wretched condition. The best roads yet existing in the Papal States are the ancient Roman highways. There are no good roads leading across the Apennines, notwithstanding their moderate elevation, and they are in general not available for wheeled carriages. For the various mountain-passes leading from Italy across the Alps, see under "Mountain-system," par. 11.

GREECE.

1. **Position and Boundaries.**—The Kingdom of Greece is bounded on the N. by European Turkey; W. by the Ionian Sea; S. by the Mediterranean; and E. by the Ægean Sea or Archipelago, which separates it from Asia Minor.

It consists of three distinct portions: *First*, a continental part called HELLAS or Northern Greece, which formed the late Turkish province of Livadia; *second*, the MOREA (the ancient *Peloponnesus*), consisting of a peninsula, separated from the former by the narrow Gulf of Lepanto, and which formed the Turkish province of Tripolitza; and *third*, an insular portion, consisting of numerous islands in the Ægean Sea. The whole is situated between lat. 36° 25′—39° 30′ N., and between lon. 20° 45′—26° E., thus occupying rather more than 3° of lat., and 5° of lon. Athens, the capital (lat. 37° 56′, lon. 23° 38′), very near the centre of this area, is in the same lat. as San Francisco, Washington, the Azores, Lisbon, Cartagena, Mount Etna, Smyrna, Tabriz, Astrabad, Yarkand, and Tsinan; and in the same longitude as Hammerfest, Hango Head, Mittau, Lemberg, Klausenburg, Widdin, Sophia, Derna, Lake Ngami, and Cape Delgado in Africa. Greece is indeed one of the most favourably situated countries of the ancient world: taken as a whole, it is the most southern peninsula of Europe: it is surrounded on three sides by the Mediterranean; it stretches out between three continents, and thus enjoys the easiest access to all other parts of the world.

2. **Form and Dimensions.**—Its form is extremely irregular, being broken up by deep inlets of the sea into a series of peninsulas and islands, which together form a peninsular prolongation of Turkey, and which stand in the same relation to Europe as Europe does to Asia. Length from N. to S. about 200 miles; extreme breadth of the continental part, 200 miles; or along the parallel of Athens, 170 miles.

3. **Coast-Line.**—In proportion to the area the coast-line is more

extensive than that of any other European country, being estimated at nearly 2000 miles, or 1 mile of coast to every 7 miles of surface.

4. **Area.**—The area of Greece, including the islands, is estimated by some authorities at 19,020, and by others at 15,237 English square miles, or less than half the area of Scotland.

5. **Population.**—In 1857 the population amounted to 1,045,232, being 68 persons to each square mile. Ancient Greece, which included Epirus and Thessaly, is supposed to have had at one time 3,500,000 inhabitants.

6. **Political Divisions.**—Previous to 1830, and whilst Greece was under the yoke of Turkey, the country was divided into three provinces—viz., Livadia in the N., Tripolitza in the S., and the Archipelago or islands in the Ægean Sea, between the mainland of Greece and Asia Minor. In 1838 it was divided into twenty-four governments, twelve of which were in the Morea, eight in Hellas, while the remaining four comprised the Cyclades and Sporades. But in 1845 this arrangement was departed from, and the whole country was divided into the following ten *nomes* or governments, which were subdivided into forty-nine *eparchies* or prefectures.

HELLAS OR NORTHERN GREECE, 4 NOMES.

Acarnania and Ætolia.—Mesolonghi (Gulf of Patras), Vrachori (Erintissa, *affl.* Aspropotamo), Vonitza 3 (Gulf of Arta), Lepanto or Nepakto 3 (Gulf of Lepanto).

Phthiotis and Phocis.—Lamia or Zeitoun, n. (Gulf of Lamia), Salona 6, Castri, n. (Bay of Salona), *Thermopylæ* (Hellada), Talanta, n. (Channel of Talanta).

Attica and Boetia.—ATHENS 31, Piræus 5, Lessina, Megara (Gulf of Ægina), Thebes or Thiva 9 (Vuriendi or Asopo), Livadia or Lebadea 9 n. (Lake Topolias), Platæa, n. (Gulf of Lepanto), *Marathon* (east coast of Attica), Ægina (Island of Ægina).

Eubœa or **Negropont.**—Egripo, Chalcis or Negropont 5 (Channel of Talanta), Karysto 3, (Channel of Egripo).

THE MOREA, 5 NOMES.

Argolis and Corinth.—Nauplia or Napoli di Romania 10, Argos 8 (Gulf of Argolis), Corinth 2 n., Vostissa 3 (Gulf of Lepanto), Poros (Island of Poros).

Achaia and Elis.—Patras 8 (Gulf of Patras), Kalavrita (Erasinus), Gastouni (Gastouni or Penēus), Pyrgos, *Olympia* (Rufia or Alpheus).

Messenia. — Calamata 2 (Nedon), Cyparissia or Arcadia 3, Navarino 2, Modon (west coast), Koron (Gulf of Koron), Mavromati (Pyrnatza).

Laconia.—Sparta 7, Mistra 2 (Basili Potamo or Eurotas), Monemvasia or Napoli di Malvasia (east coast), Maina (Gulf of Koron).

Arcadia.—Tripolitza 3, Megalopolis, Paleopoli (Roufia).

THE ISLANDS, 1 NOME.

Cyclades.—Syra or Hermopolis 14 (Island of Syra), Andros 5 (Island of Andros), Naxia 4 (Island of Naxos), Hydra 13 (Island of Hydra, Spezzia (Island of Spezzia), Port Naussa (Island of Paros).

7. **Descriptive Notes.**—The towns of Greece are all very small; of the forty-seven towns above enumerated, perhaps not more than twelve exceed 5000 of population; four exceed 10,000; while Athens alone exceeds 20,000.

HELLAS.—*Mesolonghi*, a small fortified town which greatly distinguished itself in the war of independence: here Lord Byron died in 1824. *Vrachori* (Agrinium), a small town in Ætolia, capital of the nome Acarnania and Ætolia on the small river Erintissa, an affluent of the Aspropotamo or Achelöus. *Lepanto or Nepakto* (Naupactus), a small fortified episcopal town, which gives its name to the gulf and strait adjacent: in the strait nearly opposite, the fleet under Don John of Austria totally defeated that of the Turks in 1571. *Lamia* (lately Zeitoun), a small town near the head of the gulf of same name, capital of government Phthiotis, consists of a number of good-looking houses, with a castle situated on a height, and in appearance strongly resembles Athens, though on a much smaller scale. *Salona* (Amphissa), at the southern base of Mount Parnassus; on its acropolis are picturesque ruins of its ancient citadel. *Castri* (Delphi), near the famous Castalian Spring: here stood the celebrated temple of Apollo, the principal seat of his worship: here were celebrated the Pythian games; and it was one of the two places of meeting of the Amphictyonic Council. In the centre of the temple there was a small opening in the ground, from which, from time to time, an intoxicating vapour arose. Over this chasm there stood a tripod, on which the priestess, called Pythia, took her seat whenever the oracle was to be consulted; and the words which she uttered, after inhaling the vapour, were believed to contain the revelations of Apollo. *Thermopylæ*, a famous pass or defile leading from Beotia to Thessaly, and between Mount Oeta and the Gulf of Lamia (anc. *Maliacus Sinus*), 5 miles long and 100 yards wide, and chiefly occupied by a deep morass, through which is a narrow paved causeway. Here Leonidas with his three hundred Spartans fell in opposing the Persian invaders under Xerxes, B.C. 489. *Talanta* (Opus), now a village, was the birthplace of Patroclus. ATHENS (Athenæ), capital of Attica and Beotia, and of the kingdom of Greece, is situated in a small plain through which the Cephissus and Ilissus flow to the Gulf of Ægina, 5 miles distant. It is one of the most celebrated cities in the world, and the most renowned for its literature, science, and fine arts. It is extremely ancient, having been founded, at least in part, by Cecrops, a hero of the Pelasgic race, B.C. 1336. It was burnt by Xerxes B.C. 480, but was soon rebuilt by Themistocles, and not many years later it was adorned by Pericles with the most splendid architectural works the world has ever seen. The splendour of Athens, however, chiefly consisted in its public buildings, for the private houses, even those of its greatest men, were insignificant, and the streets were narrow and irregular. The number of its inhabitants at the end of the Peloponnesian War is estimated at 120,000. The city suffered severely during the siege of Sulla, B.C. 86. Hadrian embellished it with many splendid public buildings, A.D. 122. In the reign of Arcadius and Honorius, Alaric, king of the Goths, reduced it almost to a heap of ruins. Since then it has belonged successively to Goths, Byzantines, Burgundians, Franks, Catalans, Florentines, Venetians, Turks, and Greeks. During the greater part of the middle ages it was an almost deserted place; but in 1835 it became the seat of the Greek government. It has been greatly improved of late years, and contains a fine palace, and a university founded in 1836, which in 1854 had 590 students, 39 professors and teachers, and a library of 28,000 volumes. There are also 7 gymnasia, with upwards of 1000 pupils. Of its existing antiquities the principal are the Acropolis or ancient citadel, surmounted by the Parthenon, an edifice of white marble; the Areopagus or Mars' Hill, from which the Apostle Paul addressed the Athenians; the temple of Theseus, one of the most perfect monuments of ancient Athens; the Pnyx, where popular meetings were held; and the Eleusinium, the prison of Socrates. Athens was the birthplace of many illustrious persons, among whom may be mentioned Socrates, Plato, Phidias, Pericles, and Alcibiades. *Piræus*, the port of Athens on the Gulf of Ægina, contains the tomb of Themistocles. *Lessina* (Eleusis) possessed a magnificent temple of Demeter, and gave its name to the great festival and mysteries of the Eleusinia, celebrated in honour of Demeter and Persephone. *Megara* (Megara), now a mere village, but formerly an important city, which founded numerous flourishing colonies, and the navy of which was a match for that of Athens. It is celebrated in the history of philosophy as the seat of a school called the Megarian, founded by Euclid of Megara, and distinguished for its cultivation of dialectics. *Thebes* or *Thiva* (Thebes), one of the most ancient cities in Greece, founded by Cadmus about B.C. 1549, and at one time a place of great wealth and importance. It was the capital of Beotia, and was highly distinguished in the mythical ages. Here Cadmus the Phœnician first introduced the use of letters into Europe. It was the birthplace of Hesiod, Pindar, Pelopidas, and Epaminondas, and the reputed birthplace of Dionysus and Hercules. It was the scene of the tragic fate of Œdipus, and of the war of "the seven against Thebes." *Livadia* (Lebadea), the capital of Hellas under the Turks: in its vicinity are the cave of Trophonius, the seat of one of the most famous oracles of Greece, and Chæronea, where Philip of Macedon totally defeated the Athenians, Bœotians, and Corinthians, B.C. 338; and where Sulla obtained a decisive victory over the army of Mithridates, B.C. 86. Chœronea was also the birthplace of Plutarch. *Platæa*, a ruined city near the source of the Asopus, near which the Greeks, under Pausanias, nearly annihilated the Persian army under Mardonius. *Marathon*, a hamlet situated in a plain watered by the Charadrus. In this plain was fought the celebrated battle between the Persians under Datis, and the Athenians under Miltiades, B.C. 490. The Persian army numbered 300,000 men, while the Greeks numbered only 10,000. Victory declared in favour of the Greeks, who only lost 200 men, though 6000 Persians lay on the field. *Ægina* or *Egina*, in a rocky island of same name in the Saronic Gulf: its inhabitants distinguished themselves in opposing the fleet of Xerxes at the battle of Salamis, B.C. 480. *Egripo*, *Chalcis*, or *Negropont* (Egripos), a maritime town, and capital of the island Eubœa, on the Euripus, at its narrowest part, here crossed by a bridge. It is a very ancient town, and planted numerous colonies, among which were Cumæ in Italy, and Naxos in Sicily. It was also a place of great military importance, as it commanded the navigation between the north and south of Greece. The orators Isæus and Lycophron were born here, and here Aristotle died, B.C. 322. *Karysto* (Carystus), on the south coast: in the neighbourhood was excellent marble, which was exported in large quantities, and the mineral asbestos was also found here.

MOREA.—*Nauplia* (Nauplia), on the Gulf of Argolis, one of the most important towns in modern Greece. It is enclosed by Venetian fortifications, with several batteries and two fortresses, one of which is almost impregnable. *Argos* (Argos or Argolis) is considered the most ancient city of Greece, and was long the capital of Argolis. Next to Sparta, it was the most important town of Peloponnesus; possessed numerous temples, and was particularly celebrated for the worship of Hera, whose great temple was in the vicinity. It produced some great sculptors, of whom Agelades and Polycletus are the most celebrated. About 6 miles north of it is *Karvata* (Mycenæ), which, in the reign of Agamemnon, was regarded as the first city in all Greece. *Corinth* (Corinthus), on the isthmus of same name, once a great and opulent city, but now little more than a poor village, exporting currants, wheat, oil, honey, and wax. Its citadel, on a hill 1500 feet high, would, if properly fortified, be one of the strongest fortresses in the world. Its favourable position between two seas, the difficulty of carrying goods round Peloponnesus, and the facility with which they could be transported across the isthmus, raised Corinth in very early times to great commercial prosperity, and made it the emporium of the trade between Europe and Asia. Its navy was numerous and powerful: here the first triremes were built; and the first sea-fight on record was between the Corinthians and their colonists the Corcyræans. It founded numerous colonies, was adorned with magnificent buildings, and became proverbial for its luxury and works of art. It was taken and destroyed by Mummius, the Roman consul, B.C. 146. Here Paul preached for a year, founded a flourishing church, and addressed two of his epistles to its members. *Vostissa* (Ægium), ill built and unhealthy, has a good harbour and an active commerce in currants and pine timber. *Poros*: here conferences were held which settled the new Greek monarchy in 1828. *Patras* (Patræ), a fortified seaport town, and the principal seat of the foreign trade of Greece. This chiefly consists in the exportation of currants of the best quality, large quantities of which are raised all along the north coast of the Morea. Here, in 1821, the standard of revolution was first raised in the Morea. In ancient times this was the most frequent place of landing for persons sailing from Italy to Greece. A ruined Roman aqueduct is one of the few relics of antiquity still existing. *Olympia*, now *Andilalo*, the name of a small plain in Elis, at the confluence of the Alpheus and Cladeus, where the famous Olympic Games were celebrated from the earliest times; but the Olympiads were not employed as a chronological era till the victory of Corœbus in the foot-race, B.C. 776. *Calamata*, or *Kalamata*, a seaport town, capital of government Messenia, on the Nedon, and near the head of the Gulf of Koron, maintains a brisk trade in oil, silk, and figs, and is the seat of the bishopric of Messenia. It was burnt by Ibrahim Pasha in 1825, but has been rebuilt. *Cyparissia*, *Kyparissia*, or *Arcadia*, a seaport town on the Gulf of Arcadia, with a fortress, and a considerable trade in oil, corn, hogs, valonia, honey, cotton, cheese, butter, and hides. *Navarino* or *Navarin* (Pylos), a fortified seaport town, famous for the total defeat of the Spartan by the Athenian navy, B.C. 425; and in modern times for the victory of the English, French, and Russian fleets over those of the Turks and Egyptians in 1827. *Modon* (Methone), a fortified maritime town, with a few remains of antiquity. *Mavromati,* signifying the "Black Spring" (anc. *Messene*), now a village, but anciently one of the most strongly-fortified cities of Greece, and the later capital of the ancient Messenia. *Sparta,* after long lying desolate, is now being rebuilt, and has become the capital of Laconia. In ancient times it was the chief city in the Peloponnesus, and one of the most famous in Grecian history. *Monemvasia,* or *Napoli de Malvasia* (Minoa), noted for giving its name to Malmsey wine. *Tripolitza,* formerly the Turkish capital of the Morea, when it had 20,000 inhabitants. It was stormed and taken by the Greek insurgents in 1821, and again by the troops of Ibrahim Pasha in the same year, who razed it to the ground: but it has been since rebuilt.

THE ARCHIPELAGO.—*Syra* or *Hermopolis,* a large town in the island Syra, and capital of the government Cyclades, with a harbour accessible to line-of-battle ships. In 1846 about 2500 vessels entered its port: it is a principal station of the Mediterranean steamers going to and from Constantinople; and is the residence of consuls of most European states. *Hydra,* an important town, with an active trade: its inhabitants greatly distinguished themselves during the war of independence.

8. **Capes.**—La Punta,* N.W., and Scropha S.W. of Acarnania; Bakari, S. of Ætolia; Ducato, S. of the island Santa Maura; Skala, S.E. of island Cephalonia; Kalagria, N.W. of Achaia; Klarenza, W. of Elis; Gallo, S. of Messenia; Matapan, and Malea or St Angelo, S. of Laconia; Skillo, S.E. of Argolis; Colonna † and Marathon, E. of Attica; Karysto and Doro, S. of Eubœa; Chersonesus and Kili, E. of Eubœa.

9. **Islands,** very numerous, and consisting of three groups:—

1. EUBŒA or NEGROPONT, E. of Hellas, from which it is separated by the channels Talanta and Egripo. 2. The CYCLADES, mainly arranged in two parallel series, which may be regarded as insular prolongations of Eubœa and Attica respectively. The principal are—Andros, Tinos, Miconi, Naxos, Amorgo, extending S.E. from Eubœa; Zea, Thermia, Serfo, Siphanto, Milo, Polycandro, and Santorini, extending S.E. from Attica; and Syra, Paros, Antiparos, and Nio, lying between the two former series. 3. The SPORADES ("scattered islands"), forming two groups —Skiathos, Scopelos, Kilidromi, Skyros, E. of Eubœa; and Salamis,‡ Ægina, Poros, Hydra, Spezzia, between Attica and the Morea.

10. **Gulfs and Straits.**—Gulf of Arta, between Epirus and Acarnania; Patras and Lepanto, between Hellas and the Morea; Arcadia, W. of the Morea; Koron and Laconia, S. of the Morea; Argolis or

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* La Punta, the ancient promontory of Actium, off which Augustus gained the celebrated victory over Anthony and Cleopatra, B.C. 31.

† Colonna or Sunium, on which stood the splendid temple of Athena, elevated 300 feet above the sea, the columns of which still exist, and have given the present name to the headland.

‡ Salamis, famous for the naval victory obtained in its vicinity by the Greeks, under Themistocles, over the Persians, B.C. 480. Solon and Euripides were natives of the island.

Nauplia, W. of Argolis; Ægina (also called the Saronic Gulf), between Argolis and Attica; the channels of Egripo, Talanta, and Trikeri, between Eubœa and the mainland.

11. **Surface and Mountain-System.**—The surface is almost wholly mountainous, but the hills are interspersed with fine valleys and a few plains of limited extent. The centre of the Morea forms an elevated plateau enclosed by three mountain-chains, one of which runs parallel to the deeply penetrating Gulf of Lepanto, which is supposed to have been formed, at a remote age, by an earthquake.

MOUNTAINS.—The mountains of Hellas are a continuation of Mount Pindus, which separates Thessaly from Albania. On arriving at the Grecian frontier it separates into two branches, one of which (Mount Othrys) forms the boundary between Thessaly and Greece, and separates the basins of the Salembria and Hellada: highest summit, 5700 feet. The other branch pursues a S.E. direction to Cape Colonna in Attica, and is thence prolonged through the western chain of the Cyclades to Santorini. It consists of two minor ranges—viz., the Oeta range in the N., about 7000 feet high, but containing Mount Guiona, the culminating-point of Greece, separated from the Othrys range by the basin of the Hellada; and the Parnassus range in the S., separated from the Oeta range by the basin of the Gavrios, and from the Morea by the Gulf of Lepanto: highest summits—

	Feet.
Mount Guiona, ...	8241
Mount Parnassus,	8068
Mount Helicon,	4963
Mount Cithæron,	4630
Mount Parnes,	4640
Mount Hymettus,	3370

A branch from Mount Cithæron proceeds along the Isthmus of Corinth into the Morea, and there ramifies into three small chains, which support between them the table-land of Arcadia. Many of the summits exceed 5000 feet in elevation; and Mount Taygetus or St Elias, 10 miles S.W. of Mistra, attains the height of 7903 feet. None of the mountains of Greece fully reach the line of perpetual congelation, though several of them closely approach it.

12. **Principal River-Basins.**—None of great magnitude. The principal in Hellas are the Aspropotamo, Fidaris, Hellada, and Gavrios or Mavro-Potamos; and in the Morea, the Iliaco or Gastouni, Roufia, Pyrnatza or Dhipotamo, and Basili-Potamo. The rivers and gulfs in the basins of which the provincial capitals stand, together with their ancient names and direct length in English miles, are enumerated in the following table:—

River-Basins and Gulfs.	Direct Length in Eng. Miles.	Capitals.
Aspropotamo (*Achelöus*),	100	Mesolonghi, n.
Fidaris (*Evenus*),	40	...
Gulf of Patras or Lepanto,	115	Patras.
Gavrios (*Cephissus*),	40	...
Hellada (*Spercheus*),	50	Lamia or Zeitoun.
Gastouni (*Peneus*),	30	...
Roufia (*Alpheus*),	50	Tripolitza.
Dhipotamo (*Pamisus*),	30	Calamata, n.
Basili-Potamo (*Eurotas*),	45	Sparta.
Gulf of Nauplia (*Argolicus Sinus*),	35	Nauplia.
Gulf of Ægina (*Saronicus Sinus*),	60	ATHENS.
Channel of Egripo (*Euboicum Mare*),	135	Chalcis or Negropont.

13. **Table of Rivers and Towns.**—The towns of Continental Greece, enumerated in the following table, are forty in number: only two (Athens and Nauplia) contain more than 10,000 inhabitants; while most of the remainder are very small, and situated for the most part on arms of the sea:—

Basins inclined to the Ionian Sea.

Rivers.	*Towns.*
Gulf of Arta,	Vonitza.
Aspropotamo,	Vrachori.
Gulfs of Patras and Lepanto,	MESOLONGHI, PATRAS, *Lepanto*, Salona, Castri, n., *Corinth*, *Vostissa*, *Platæa*, n.
Erasinus, *l*	*Kalavrita.*
Gastouni,	*Gastouni.*
Roufia,	*Pyrgos*, *Olympia*, Megalopolis, TRIPOLITZA, *Palæopoli.*
W. co. of Messenia,	Cyparissia or Arcadia, *Navarino*, *Modon.*
Gulf of Koron,	*Koron*, CALAMATA, *Maina.*
Pyrnatza,	*Mavromati.*
Basili-Potamo,	*Mistra*, SPARTA.

Basins inclined to the Ægean Sea.

E. co. Laconia,	*Napoli di Malvasia* or *Monemvasia.*
Gulf of Argolis,	NAUPLIA, *Argos.*
Gulf of Ægina,	*Poros*, *Megara*, *Lessina*, *Piræus*, ATHENS.
Channels of Egripo and Talanta,	*Karysto*, *Marathon*, CHALCIS or NEGROPONT, *Talanta.*
Asopo (*Æsopus*),	Thebes or Thiva.
Gavrios,	*Livadia*, n. (on Lake Topolias).
Hellada,	*Thermopylæ*, LAMIA or ZEITOUNI.

14. **Lakes.**—The only lake of importance is Topolias (*Copais*) in Beotia, which receives the Gavrios (*Cephissus*), and discharges its waters into the Euripus, or channel of Talanta, by subterranean channels called *catabothra:* its length in winter is 16 miles, greatest breadth 8 miles; but in summer much of it is merely a reedy marsh. In the basin of the Aspropotamo are the lakes Kastro, Vrachori, and Ozeros. In the basin of the Roufia is lake Phonia or Zaraka (*Stymphalus*). Lake Ambrakia, in Acarnania, probably belongs to the basin of the Aspropotamo, but it has no visible outlet.

15. **Climate.**—The climate is in general warm and delightful, and only inferior to that of Italy.

The summer is extremely warm, the temperature often rising to 100° Fahr.; but it is greatly modified by sea-breezes. At this season rain seldom falls; the smaller rivers are dried up; the air is remarkably clear, not a cloud to be seen for several weeks. In autumn rain becomes frequent and copious, and the streams fill their channels. Winter does not exceed two months' duration, and is marked by rain in the plains and snow in the mountains, the latter retaining their covering till summer is far advanced, though none of them attains the limit of perpetual congelation. Snow appears in October, and continues to fall till April. In March the olive buds and the almond is in blossom, while grain is ready for the sickle in May. The mean temperature of the whole country ranges from 64° in the S., to 59° in the N. Mean temperature of Athens 60°, winter 41°, summer 77°.

16. **Geology.** — Crystalline rocks cover the south-eastern part of the Morea, as also Attica, Eubœa, the Cyclades, and Sporades. Tertiary strata line the western side, from the Gulf of Arta to Navarino in the Morea. The entire remainder is occupied with secondary rocks. Limestone is largely developed in the mountains, where it often assumes the form of the finest marble, which is extensively used for building and statuary. Volcanic rocks, though not found in the mainland, form considerable masses in some of the islands, one of which (Santorini) is indeed only a recently extinct volcano.

The *Mineral* treasures of Greece are rich and varied, though very sparingly worked. Marble is abundant, together with sulphur, saltpetre, lignite, asbestos, mill-stones, whetstones, serpentine, fuller's earth, porcelain earth, argentiferous lead, and traces of gold. Iron is found in Eubœa and some other islands; and coal occurs both in Eubœa and the Morea. Salt is obtained in various places; mineral and gaseous springs, both cold and thermal, some of them sulphureous, and others saline, are numerous; and caverns and fissures, emitting mephitic vapours, abound everywhere.

17. **Botany.**—The botany of Greece considerably resembles that of Southern Turkey and Albania. — (See under "Turkey.") Dr Sibthorpe, in his *Flora Græca*, enumerates 850 species, which he collected principally in Attica and Beotia. Most of our finer garden-flowers grow wild in Greece, as the Hyacinth, Ranunculus, Tuberose, Narcissus, Iris, Anemone, Cistus, Astragalus, and Pistacia. The natural vegetation of the country, from the sea-level to the height of 1500 feet, exhibits as great a variety of valuable trees,

shrubs, and plants as can be found in an equal extent of country anywhere throughout the world. Among the most important and useful may be reckoned the olive, vine, orange, lemon, prickly fig, almond, the date-palm (in Attica), the currant grape of Corinth, which is a species of vine yielding the currants of commerce, the citron, pomegrante, and banana. The water-melons and gourds are excellent. At elevations less than 1600 feet the myrtle, mastich, and plane-tree flourish; while the mountains are covered with forests of pine.

Agriculture.—The arable land is of very limited extent, and much of the soil is of a thin and by no means fertile nature. Agricultural implements and operations are of the most primitive description, and the grain raised is only about two-thirds of that required for home consumption. The plough in use differs in no respect from that described by Hesiod nearly 3000 years ago. The principal crops are—wheat, barley, maize, rice, coffee, tobacco, cotton, madder, flax, and figs; but the olive takes precedence of all others, both soil and climate being particularly favourable to its growth. The cultivation of the mulberry has also of late been greatly extended. The domestic animals are of inferior breeds, and the ass is almost the only beast of burden. Sheep are very numerous, and form with goats the only animals from which dairy produce is obtained.

18. **Zoology.**—The most common wild *Quadrupeds* are the bear, lynx, wildcat, boar, stag, roebuck, goat, badger, marten, wolf, fox, weasel, jackal, hare, and hedgehog. *Birds* comprise the vulture, falcon, owl, cuckoo, roler, kingfisher, teal-duck, stork, partridge, pigeon, quail, snipe, blackbird, goldfinch, nightingale, swallow, martin, flamingo, and pelican.—(See under "Turkey," par. 18.)

19. **Ethnography.** — The people of modern Greece are a mixed race, the pure blood of the Pelasgians having in the course of ages become largely intermixed with Sclavonic, Teutonic, and even Turkish elements. In some parts of Northern Greece, as also in the northern and eastern parts of the Morea, and some of the islands, Albanians constitute the majority of the inhabitants.

Language.—The ancient Greek formed one of the principal members of the Greco-Latin branch of the great Indo-European family. Modern Greek or Romaic differs as little from the ancient as some of the dialects of the latter differed from each other; and greatly more resembles it than the Romanic languages (French, Italian, and Spanish) do the Latin. (See p. 97.) The Albanians also continue to speak the ancient language of their Illyrian progenitors with great purity.—(See under "Turkey," par. 19, and pp. 95-97.)

Religion.—The Greeks proper and the Albanians nearly all belong to the Greek or Eastern Church, which separated from the Romish or Western, A.D. 862. It mainly differs from the latter in not recognising a Vicar of Christ on earth; in denying the infallibility of ecclesiastical councils; in administering the Eucharist in two kinds; in denying the doctrine of purgatory and the adoration of images, though that honour is freely conceded to paintings of the Deity, of the Virgin Mary, and of other saints; and finally, in requiring the working clergy to be once married. Other sects, however, exist, and enjoy a limited amount of toleration; but all attempts at proselytism from the national church are strictly prohibited. In 1845 the Greek Church had 974,000 adherents, with 2123 priests and deacons; 138 convents, with 1646 monks; and 4 nunneries, with 151 nuns. In the same year there were 25,000 Roman Catholics and 3000 Protestants. Several agents of British and American Bible Societies are settled in different parts of the kingdom.

Education is in a very backward state, but strenuous efforts are made to improve it. Besides the University of Athens, there are gymnasia at Athens, Nauplia, Patras, Hermopolis, and Hydra; together with normal, polytechnic, and naval schools: these contain in all 58,674 pupils, taught by 989 professors or teachers.

20. **Literature.**—The literature of Greece, the most copious and brilliant in the history of our race, belongs almost exclusively to ancient times. Every scholar is more or less familiar with it, and we need not here expatiate on it. Of the few names contained in the following list, several were not natives of Greece:—

POETS.—Homer, Hesiod, Tyrtæus, Sappho, Anacreon, Pindar, Æschylus, Sophocles, Euripides, Aristophanes.

HISTORIANS.—Herodotus, Thucydides, Xenophon, Polybius, Diodorus Siculus, Diogenes Laertius, Plutarch.

ORATORS.—Empedocles, Gorgias, Isocrates, Demosthenes, Æschines, Hermogenes, Longinus.

PHILOSOPHERS.—Thales of Miletus, Anaximander, Anaximenes, Anaxagoras, Pythagoras, Heraclitus, Democritus, Socrates, Plato, Aristotle, Epicurus, Zeno, Plotinus.

MATHEMATICIANS AND ASTRONOMERS.—Eudoxus, Euclid, Eratosthenes, Archimedes, Apollonius, Hipparchus, Ptolemy, Diocles Proclus, Isidorus, Diophantus.

GEOGRAPHERS.—Posidonius, Strabo.

PHYSICIANS.—Æsculapius, Hippocrates, Herophilus, Galen.

FINE ARTS.—Agelādas, Myron, Phidias, Polycletus, Polygnotus, Apelles, Aristides.

21. **Government, &c.**—Greece, which had for ages groaned under the yoke of Turkey, revolted against that power in 1821; and after a long and severe struggle, in which it was aided by the European powers, secured its independence in 1830, and in 1832 Otho, second son of the King of Bavaria, was appointed king. The government, at first nearly absolute, became, after the revolution of 1843, a constitutional monarchy.

In 1857 the *Army* consisted of 9686 men and officers, besides 687 horses; and the *Navy* embraced two corvettes, a steam-ship, and twenty-three small vessels, which carried 149 guns.

The *Revenue* in 1857 amounted to nearly 23,000,000 drachms, or £835,625 sterling; the *Expenditure* to £753,000; and the *Public Debt* to £8,250,000.

22. **Commerce, &c.**—The chief resource of the inhabitants of Greece consists in their maritime commerce. The principal ports are the Piræus, Patras, Nauplia, Hermopolis, Calamata, and Navarino.

In 1856 the *Mercantile Marine* consisted of 5052 vessels, with an aggregate burden of 295,000 tons, employing 30,000 men. The Greeks are expert mariners; the great extent of coast-line gives them many facilities for maritime pursuits; and they have for a long time been the principal agents in conducting the commerce of the eastern part of the Mediterranean.

23. **Manufactures.**—The manufactures are few, and chiefly domestic, consisting of silk, cotton, and woollen stuffs; coarse pottery, leather, beetroot sugar, and soap, are made in the principal towns; carpets, sail-cloth, and straw-hats in some of the islands: the women excel in embroidery; and dyeing in bright colours has been perpetuated from ancient times. Shipbuilding is also carried on at Syra, Lepanto, and other ports. The *Exports* embrace currants, cotton, olive-oil, tobacco, wool, honey, wax, gum, and valonia (a species of acorn used by tanners). *Imports*, manufactured goods, colonial produce (as sugar, coffee, &c.), flax, timber, rice, drugs, &c.

24. **Inland Communication.**—No railways nor canals: the roads are few in number and of the most wretched description, except near the capital; and such as exist are infested with bands of robbers. A good road, however, now connects Athens with the Piræus.

TURKEY.

The Turkish or Ottoman Empire comprehends all the countries in which Turkish supremacy is directly or indirectly recognised. Its area and population are ill-defined—the authority of the Sultan being little more than nominal in many extensive provinces. Its vast territories, though situated in the three continents which constitute the Old World, are strictly continuous, comprising a large territory in the extreme S. of Europe; another, three times as large, in the W. of Asia; and a third, of still greater dimensions, in the N.E. of Africa. It is bounded on the N. by the Transcaucasian provinces of Russia, the Black Sea, and the Hungarian provinces of Austria; on the W. by Dalmatia, the Adriatic, and Mediterranean Seas, Algeria, and the Sahara; on the S. by Abyssinia and the Gulf of Aden; and on the E. by Persia and Transcaucasia.

This wide expanse of territory, equal in dimensions to the most famous empires of antiquity, is intensely interesting to every reflecting mind. It is *geographically* interesting, as lying midway between the four great oceans, thus occupying the central area of the Old World. It is *historically* interesting, as comprehending the scene of man's earliest history — his high origin, his happy paradise, his early rebellion, and the first promise of his future restoration to fellowship with his Maker. Here the antediluvians lived out their centuries of violence, and here the ark of Noah floated securely above that flood which exterminated the rebellious race; here the patriarch alighted to people afresh the desolate earth, and here his descendants attempted anew to oppose the decrees of Heaven;—here the most ancient empires were founded, the first cities built, the earliest arts cultivated, the temple of science founded, and the saving truths of revelation first published;—here wandered those pilgrim fathers who lived "as seeing Him who is invisible;" here their offspring were held in bondage, and the power of the Divine arm, working in their behalf, was revealed;—here was situated that "good land" which the Most High had kept in reserve for His peculiar people, "when He divided to the nations their inheritance, and separated the sons of Adam;" here seers prophesied, and inspired bards sang;—here God tabernacled amongst men, and the Son of God assumed the human form; here He suffered and died for man, and laid the foundations of a kingdom that is destined ere long to embrace all the tribes of ruined humanity.

It is *socially and economically* interesting: it is rich in mineral treasures; contains large tracts of soil that need but to be scratched in order to produce most luxuriant harvests; and it is occupied by races of high physical development, but whose mental and moral powers have been asleep for ages under the incubus of a degrading superstition. The mighty power of Islam is, however, at length on the wane, and the doctrines of the Cross are beginning to exert their still mightier power in numerous parts of this great but decaying empire. It is the concurrent testimony of all recent travellers that the several nationalities have been deeply stirred, and that the movement now in progress is of a religious character. For many years the missionaries of the American Board have laboured among the Armenians; at certain spots, such as Constantinople, Salonika, and Smyrna, other Protestant bodies are seeking the good of Jews or Gentiles; very recently the Episcopal Methodists of America have commenced a mission in Bulgaria: but much land remains to be possessed. The capital of this vast empire is Constantinople, situated on the strait which separates the European from the Asiatic provinces, and containing about half a million inhabitants. The administrative divisions are into *eyalets* or *pashalics*, each of which is governed by a Pasha or viceroy, and *sanjaks* or *liwas*, the governors of which are called Kaïmakams, and sometimes Beys. The empire is said to consist of twenty-eight eyalets, four of which are in Europe; but their names and limits have been so frequently, and even capriciously changed, that it is difficult to speak with certainty of those actually existing. The accompanying table contains the names of the various countries more or less under Turkish rule, together with the nearest approximation that can be made to their present area and population.

THE TURKISH EMPIRE.

	Area in Eng. Square Miles.	Population.
Turkey in Europe,	203,628	15,500,000
Asia Minor,	211,274	10,700,000
Armenia and Kurdistan,	49,000	2,585,000
Mesopotamia (Bagdat),	165,000	
Syria, including Palestine,	50,000	1,865,000
Part of Arabia,	194,400	900,000
Egypt, Nubia, and Kordofan,	579,500	3,295,500
Tripoli, Fez, and Tunis,	379,500	1,800,000
Total for the Empire,	1,832,302	36,645,000
Or more generally—		
Turkey in Europe,[*]	203,628	15,500,000
Turkey in Asia,	669,674	16,050,000
Turkey in Africa,	959,000	5,095,500

TURKEY IN EUROPE.

1. **Position and Boundaries.**—N. the Hungarian provinces of Austria; W., Dalmatia, the Adriatic, and the Ionian Sea; S., Greece, the Ægean Sea, and the Sea of Marmora; E., the Black Sea and Bessarabia. It lies between lat. 39° and 48° 20′ N., and between lon. 15° 40′ and 30° E., thus occupying more than 9° of lat. and more than 14° of lon. Omitting the north-

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[*] The new edition of "Johnston's Physical Atlas" gives, for Turkey in Europe, 197,625 square miles, and the population the same as above; for Turkey in Asia, an area of 508,800 square miles, and the population 16,050,000; for Egypt, Nubia, and Kordofan, an area of 358,000 square miles, population 6,895,000; and for Tripoli, Tunis, and Fez, 268,000 square miles, population 1,800,000; total for the Empire, 1,332,425 square miles, and 40,245,500 of population.

ern part of Moldavia, the town of Sophia (lat. 42° 38′, lon. 23° 26′) is in the centre of the remaining area; but Constantinople (lat. 41°, lon. 29°), which is greatly nearer the centre of the empire, is nearly on the same parallel as New York, Madrid, Naples, Bokhara, and Pekin; and nearly on the same meridian as St Petersburg, Alexandria, and Port Natal.

2. **Form and Dimensions.**—Leaving out Moldavia, which stretches northward 180 miles beyond the frontiers of Wallachia, the physical configuration of the remainder approaches a trapezium or truncated pyramid, with the base resting on the Save, Danube, and Eastern Carpathians, and having its two sides respectively washed by the Adriatic and Black Sea. The greatest length from W. to E. is 650 miles; the extreme breadth from the Save to the frontiers of Greece, 400 miles.

3. **Coast-Line.**—The coast-line is extensive, and stretches along four seas; total length about 1300 miles, of which the Adriatic embraces 200, the Ionian Sea 100, the Ægean Sea 600, and the Black Sea 400. The harbours on the west side are inferior, but many of the others are excellent.

4. **Area.**—The area is generally computed at 203,628 square miles, or four times the size of England without Wales.

5. **Population.** — In 1844 the population was estimated at 15,500,000, or 76 persons to each square mile. The population of England is more than four times as dense, though the advantages of climate and soil are wholly on the side of Turkey.

6. **Political Divisions.**—European Turkey, including the Danubian Principalities (Servia, Wallachia, and Moldavia), which are nearly independent, and the island Crete, consists at present of the following eleven provinces:*—

Bosnia and Turkish Croatia.—Bosna-Seraï 40 (Migliazza, *affl.* Bosna), Traunik 9 (Laschva), Zvornik 10 (Drin), Banialuka 8

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* For administrative purposes the whole is divided into seven eyalets and thirty-seven sanjaks, the names and areas of which have been so often, and even capriciously changed, that it is difficult to speak of them with certainty. According to the most recent authorities they are as follows:—

Eyalets.	Sanjaks
Bosnia,	Croatia or Banialuka, Traunik, Zvornik, Srebernik, Hertsek or Hertzegovina.
Roumilia,	Montenegro, Scutari, Prisrend, Uskup, Kroya, El Bassan, Ochrida, Valona, Delvino, Janina, Trikhala, Monastir or Bilolia, Salonika, Seres, Kostendil, Sophia or Triaditza.
Servia,	Semendria, Novi-Bazar, Kruschevacz, Pristina.
Silistria,	Widdin, Nicopoli, Silistria, Tchirmen, Kirk-Kilissia, Viza or Wisa, Stamboul.
Wallachia,	Little Wallachia (cap. Krajova), Greater Wallachia (cap. Bucharest).
Moldavia,	Moldavia or Boghdan, subdivided into twelve *cazas* or districts.
Djezayr, or the Archipelago,	Gallipoli, Candia or Crete, the islands Thaso, Samothraki, Imbros, Lemnos, Strati.

(Verbas, *affl.* Save), Novi 10 (Unna), Novi-Bazar or Yeni-Bazar 15 (Ibar, *affl.* Morava).

Towns between 5000 and 10,000 inhabitants.—Doboi, Maglai, Gradiska, Belina, Juicza, Bihacz, Livno, Dubicza, Kliutch.

Herzegovina.—MOSTAR 8 (Narenta), Trebigno 10 (Tribinschucza).

Poschitel, Stolacz.

Montenegro.—CETIGNE or ZETTINIE (on an affluent of the Boyana).

Albania.—SCUTARI 40 (Boyana), Jacova 18 (Drin), Prisrend 25 (Riaka, *affl.* Drin), Kroya 15, Tirana 10 (Jantra or Jacon), Berat 10 (Ergent), Delvino 10 (Pistricza), Arta 9 (Arta), Janina 36 (Lake Janina), Durazzo 10, Avlona or Valona 10, Prevesa 8 (west coast).

Podgoricza, Alessio, Koridja, Carbonara, Tepeleni, Konicza, Philates, Souli, Paramythia, Metzovo, Antivari, Dulcigno, Margariti, Parga, El Bassan, Argyro-Kastro.

Thessaly or **Trikhala.**—LARISSA OR YENITCHER 25, Trikhala or Tricala 10 n. (Salembria).

Ambelakia, Satalge or Pharsala, Volo, Armyro.

Roumelia or **Rumili** (including Macedonia and Thrace).—CONSTANTINOPLE or STAMBOUL 500 (Bosporus), Uskup or Scopia 10 n. (Vardar), Vodena 12 (Vistritza), Monastir or Bitolia 15 (Tzerna), Salonika 70 (Gulf of Salonika), Seres 30 n., Adrianople 100, Philippopolis or Filibi 40, Tatar-Bazardjik 10 (Maritza), Kirk-Kilissia 20 (Tearus, *affl.* Erkeneh), Selimnia or Islivni 20, Eski-Sagra 20 n., Kazanlik 10 (Tondja), Gallipoli 17, Rodosto 40 (Sea of Marmora).

Pera, Alaklissi (*Pella*), Veria, Yenidja-Vardar, Servia, Kuprili, Istib, Karatova, Komanova, Neokhorio (*Amphipolis*), Orphano, Demir-Hissar, Petrovitch, Kostendil or Ghiustendil, Dubnicza, Filibi (*Philippi*), Drama, Rasluk, Kavallo, Lagos, Enos, Ipsala, Demotika, Tchirmen, Hirepoli, Seraï, Viza or Wisa, Ganos, Erekli, Ainada, Burgas, Kossova, Janboli.

Bulgaria.—SILISTRIA 24, Rustchuk 30, Sistova 20, Nicopoli 20, Widdin 25 (Danube), Tirnova 16 (Jautra, *affl.* Danube), Sophia 50 (Isker), Shumla 25 (Kamtchik), Varna 25, Baba-Dagh 10 (east coast).

Tultcha, Matshin, Hirsova, Rassova, Turtukai, Osman-Bazar, Rasgrad, Eski-Djuma, Pravadi, Yeni-Bazar, Baltshik, Kustendji, Baba-Dagh, Isaktchi, Bergovacz, Samakov.

DANUBIAN PRINCIPALITIES AND CRETE.

Servia.—BELGRADE 30, Semendria 12 (Danube), Pristina 12 (Ibar), Nissa 10 (Nissava).

Gladova, Kruschevacz, Kragojevacz, Karanovacz, Schavacz or Shavacz, Valievo, Passarovicz.

Wallachia.—BUCHAREST 60 (Dumbovitza), Ibrail or Brahilov 6, Giurgevo 7 (Danube), Foktchany 6 (Milkov, *affl.* Sereth), Krajova 9 (Schyl).

Oltenitza, Tergovist, Kalefat, Tchernecz, New Orsova, Rimnik, Ploesti or Plovest, Turna, Karakal, Slatina, Tirgoshyl.

Moldavia.—JASSY or YASSY 20 (Baglui, *affl.* Pruth), Ismael 26, Galacz 36 (Danube).

Reni, Botuchany, Kilia, Bolgrad, Adjiud, Baku, Roman, Nyamtz or Niamtz, Bistritz.

Crete or **Candia.**—CANDIA or MEGALO-KASTRO 12, Retimo 8, Canea or Khania 8 (north coast).

7. **Descriptive Notes.**—European Turkey contains one hundred and sixty-three towns of more than 5000 inhabitants; fifty above 10,000; twenty-seven above 20,000; five above 50,000—viz., Constantinople, Adrianople, Salonika, Bucharest, and Sophia; and two (the capital and Adrianople) above 100,000.

Bosna-Serai, capital of the province Bosnia and Croatia, is a large, well-built, and fortified city, and the entrepôt for the commerce of Turkey, Dalmatia, and Southern Germany: in the vicinity are iron-mines and mineral baths. *Traunik* or *Travnik*, the capital of sanjak of same name, has a manufactory of sword-blades: the inhabitants are nearly all Mohammedans; and there are rich iron-mines in the vicinity. *Zvornik*, capital of sanjak, has lead-mines in the vicinity. *Banialuka*, capital of sanjak of same name, also called Turkish Croatia, with a fortified castle, numerous mosques, colleges, baths, bazaars, a manufactory of gunpowder; and is a place of great trade. *Novi-Bazar*, capital of sanjak, mostly built of mud, and defended by a castle. *Mostar*, capital of Herzegovina, noted for its ancient Roman bridge, which consists of a single arch 95 feet in span; has manufactures of swords and firearms, and exports hides, wool, fruit, wax, tallow, and cattle. *Trebigno* or *Trebinje*, the ancient Trebunium, is the see of a Roman Catholic bishop, and defended by a fort. *Cetigne* or *Zettinie*, the capital of the republic of Montenegro, is a mere village, with a fortified convent: there are no towns in the republic. *Scutari* (anc. *Scodra*, Turkish *Iskanderi*), once the most important town of Illyricum, and the residence of the Illyrian King Gentius, is now the capital of a sanjak, and the chief city in Albania; contains an arsenal and barracks, building-yards, and manufactures of cotton goods and firearms. Its merchants are the principal traders in Western Turkey. *Jacova*, on the White Drin, near Prisrend, a large town of 18,000 inhabitants. *Prisrend* or *Perserin*, capital of sanjak, the residence of the Turkish governor, contains numerous mosques, with manufactures of firearms which are much celebrated, and an active trade. *Kroya*, capital of a sanjak, has manufactures of arms: its castle, now demolished, was Scander Beg's residence. *Delvino*, capital of sanjak, a fortified town, beautifully situated on the Pistricza, and surrounded by plantations of olives and oranges. *Arta* (anc. *Ambracia*), founded by a Corinthian colony B.C. 660, was the capital of the kingdom of Pyrrhus. It has manufactures of coarse cottons, woollens, Russian leather, and of embroidery which is brought to great perfection. It was nearly destroyed during the Greek insurrection in 1828. *Janina*, *Yanina*, or *Joannina* (anc. *Euræa*), has a melancholy celebrity from its connection with the infamous Ali Pasha, who reduced it to ashes in 1820: though since rebuilt, its commerce, which was once extensive, has greatly declined. In its vicinity, at the southern end of the lake, was Dodona, the seat of the most ancient and celebrated oracle of antiquity; the temple and grove were destroyed by the Ætolians B.C. 290. *Durazzo* (Dyrrachium) an ancient town, noted for being the usual landing-place from Brundusium in Italy, which is nearly opposite—these two towns forming the Dover and Calais of antiquity. *Avlona* or *Valona* (Aulon), capital of sanjak: on the southern side of the gulf is the rock fortress of Canina. *Prevesa:* near it the ruins of Nicopolis, which was founded by Augustus in commemoration of his naval victory of Actium. *Alessio* (Lissus) contains the tomb of Scander Beg, a celebrated Albanian chief, who died in 1467. *Tepeleni,* the birthplace of Ali Pasha in 1750. *Souli,* celebrated for the long struggle of its inhabitants against Ali Pasha. *Argyro-Kastro,* a fortified town commanding the pass of Derbend; was taken by Ali Pasha in 1812, since which time it has not recovered its former importance. *Larissa* or *Yenitcher* (anc. *Larissa* or *Larza*), a very ancient city, once the capital of the Pelasgi, situated on the Salembria (anc. *Peneus*), in an extensive plain; after the time of Constantine the Great, it became the capital of Thessaly; it consists chiefly of a series of narrow, dirty, and tortuous streets, lined with miserable clay and wooden houses; has some manufactures of cotton, silk, leather, and tobacco; its dyeworks are noted for their red colours. *Trikhala* or *Tricala* (anc. *Tricca*), capital of sanjak of same name, contained a temple dedicated to Æsculapius: it is now greatly neglected, and is partly in ruins. *Satalge* or *Pharsala* (anc. *Pharsalus*), near which was fought the decisive battle between Cæsar and Pompey, B.C. 48, which made Cæsar master of the Roman world.

CONSTANTINOPLE (Turk. *Stamboul,* anc. *Byzantium*), a large and celebrated city, capital of the Ottoman Empire, and formerly of the Byzantine or Lower Roman Empire: it occupies a triangular promontory of land between the Bosporus and its inlet, the Golden Horn. Beyond this inlet are the important suburbs of Pera, Galata, and Tophana, the two former of which are the principal seats of trade, and the residence of nearly all classes of foreigners. The city consists chiefly of wooden houses and narrow streets, with numerous mosques, ancient columns and obelisks, public fountains and baths. Its general aspect, when approached by water, is of the most striking and beautiful description, exhibiting to view a crowd of domes and minarets, backed by the dark foliage of the cypress and other trees which shade the extensive cemeteries beyond the walls. The most striking of the public buildings are the Seraglio, or imperial palace, which with its grounds occupies an area of 3 miles; the church of St Sophia, built by the Emperor Justinian in the sixth century, now converted into a Mohammedan mosque; the mosque of Achmet, a fine structure, with a beautiful marble pavement and six minarets, a number possessed by no other mosque in the Mohammedan world; the mosques of Solyman the Magnificent and of Mohammed II., surrounded by eight endowed academies, &c. The bazaars are extensive and well supplied; and there are numerous naval, military, and medical colleges, forty public libraries, three printing establishments, and thirteen journals printed in six different languages. Manufactures unimportant, chiefly of morocco leather, saddlery, shoes, and meerschaum pipes. Exports and imports very numerous. Byzantium was founded by Byzas, the leader of a Megarian colony, B.C. 658, was rebuilt by Constantine A.D. 328, was taken by the Crusaders in 1204, who retained it till 1261, and by the Turks in 1453, an event which marked the final extinction of the Roman Empire in the East. *Uskup* or *Scopia,* capital of sanjak, on the Uskup, an affluent of the Vardar, contains a Turkish garrison and extensive manufactures of leather. *Vodena* or *Vodina* (anc. *Edessa*), was the ancient capital of Macedonia, and the place where its kings were interred: here Philip of Macedon was murdered by Pausanias, B.C. 336: it has several manufactures of cotton and woollen fabrics. *Monastir* or

Bitolia, capital of sanjak, a principal entrepôt for the goods passing from E. to W. Turkey. *Salonika* or *Saloniki* (anc. *Thessalonica*), a large seaport, and the second commercial city in European Turkey; has a large trade in British produce, and numerous exports; it is a place of great antiquity, and derived its name from the wife of Cassander, the sister of Alexander the Great, B.C. 315; it was the principal city of Macedonia under the Romans: its inhabitants were cruelly massacred by the Emperor Theodosius, because some Roman officers had been assassinated here by the populace; was the residence of Cicero during a part of his exile, and was visited by St Paul A.D. 53, when he founded in it a Christian church, to which he afterwards addressed two of his epistles. *Seres*, a large walled town, capital of a sanjak, the centre of the cultivation and trade of cotton in European Turkey. *Adrianople* (anc. *Hadrianopolis*), founded by the Emperor Hadrian B.C. 378, was, next to Constantinople, the chief city of the Eastern Empire: it was the capital of the Ottoman Empire from 1366 to 1453, and is still considered the second capital of the Empire. Next to the capital, it is the most populous city in European Turkey: it has an active commerce in manufactured goods, and numerous manufactures of silks, woollens, linens, dyeworks, and tanneries. The chief outlet for its commerce is the port of Enos. *Philippopoli* or *Filibi* (anc. *Philippopolis*), founded by Philip of Macedon: under the Romans, it was one of the most important towns of the country; has flourishing manufactures of woollens, silks, and cotton fabrics, leather, soap, tobacco, and a considerable transit trade; it was nearly destroyed by an earthquake in 1818. *Kirk-Kilissia*, capital of sanjak, and a large manufacturing town on the route from Constantinople to Shumla. *Selimnia*, *Selimno*, or *Islivni*, near the important pass called the Iron Gate, with manufactures of woollens, gun-locks, and attar of roses. *Eski-Sagra* has manufactures of carpets, with mineral baths in the vicinity. *Gallipoli*, the first European town taken by the Turks (1355), is now the principal station of the Turkish fleet; it is the capital of a sanjak, and of the eyalet of Djezayr, and is a place of great trade; it is noted for its leather. *Rodosto* (anc. Bisanthe), a fortified, large, and maritime city, contains many handsome streets; has an important trade in corn, wine, and other commodities. *Alaklisi* (anc. Pella), was the birthplace of Alexander the Great, B.C. 356. Philip made it the capital of his kingdom. *Veria* (Berea), honourably mentioned by St Paul in Acts xvii. 11. *Karatova*, noted for an argentiferous copper-mine. *Neokhorio* (Amphipolis), an ancient town of considerable historic celebrity, was one of the most important of the Athenian possessions, being advantageously situated for trade, and near the gold-mines of Mount Pangæus. *Kostendil*, capital of a sanjak, has sulphur baths, and in its vicinity iron, gold, and silver mines. *Filibi* (Philippi), celebrated for the victory gained here B.C. 42 by Augustus and Mark Antony over Brutus and Cassius, and as being the first city in Europe in which the Gospel was preached. It is now only a wretched village, with numerous ruins of its ancient grandeur. *Eski-Kavallo* (Neapolis): here St Paul landed from Troas; and here was born Mehemet Ali, Pasha of Egypt, in 1765. *Enos*, the port of Adrianople, is very ancient, being mentioned by Homer. *Kossova*, noted for two great battles gained by the Turks in 1389 and 1448, by the former of which the independence of Servia was annihilated. *Silistria* (Turk. *Dristria*, anc. *Dorostorum*), on the right bank of the Danube, is the capital of the eyalet of same name. It was besieged by the Russians in 1854, but they were compelled to abandon their works after a great loss of men, and were driven across the Danube. *Rustchuk*, a fortified city on the Danube, the residence of a bey, and possessing considerable trade. *Sistova,* fortified, and garrisoned by 3000 men. *Nicopoli* (Nicopolis ad Istrum), an ancient city, founded by Trajan, fortified, and the capital of a sanjak. Here the Turks defeated the Hungarian army under Sigismund in 1396. *Widdin* or *Widin,* a strongly fortified town on the Danube, capital of a sanjak, and the residence of a pasha and of a Greek archbishop; has trade in corn, wine, and rock-salt. *Sophia* (Sardica), capital of a sanjak, on the grand route from Constantinople to Belgrade; it has hot baths and manufactures of woollen and silk fabrics, leather, and tobacco: it was founded by Justinian, and was the birthplace of the Emperor Maximian. *Shumla* (Marcianopolis), occupying one of the principal passes of the Balkans, and strongly fortified; it is reckoned one of the keys of the metropolis; has been repeatedly attacked by the Russians, who have been as repeatedly repulsed. Here are flourishing manufactures of tin and copper wares, silk goods, and leather, which are sent to Constantinople. *Varna,* a strongly fortified town on the coast: here the Hungarians were defeated by the Turks in 1444; in 1828 it was taken by the Russians after a siege of three months' duration; and from it sailed the Anglo-French army on their way to Sebastopol in 1854.

The THREE DANUBIAN PRINCIPALITIES and CRETE contain thirty-nine towns of above 5000 inhabitants; nine above 10,000; five above 20,000; and one (Bucharest) above 50,000.

Belgrade (Singidunum), capital of Servia, a strongly fortified city at the confluence of the Danube and Save, and the entrepôt of commerce between Turkey and Austria. It was taken by the Turks under Solyman II. in 1522, and retaken by Prince Eugene in 1717. It has manufactures of arms, carpets, silk goods, cutlery, and saddlery; it was nearly destroyed during the Servian insurrection of 1813. *Semendria,* a fortified town on the Danube, and the former residence of the Servian kings, now nearly in ruins. *Pristina* has the tomb of Sultan Amurath I. in the vicinity. *Nissa* (Naissus), a fortified town, noted for its warm baths. *Gladova,* the chief station of the Danube Steam Navigation Company; near it are the remains of Trajan's bridge. *Bucharest,* capital of Wallachia, one of the principal entrepôts for the commerce between Turkey and Austria, consists for the most part of a huge collection of mud cabins surrounding the palace of the hospodar; but the scenery around is agreeable, and hence the name Bucharest, which signifies the "city of enjoyment." It is the seat of the Divan or Supreme Council of Wallachia, and the headquarters of the foreign envoys. Its chief trade consists in grain, timber, wool, salt, and wax. Here was concluded the famous treaty of Bucharest, by which, in 1812, Bessarabia and a part of Moldavia were ceded by Turkey to Russia. *Ibrail* or *Brahilov,* a small fortified town on the Danube, and the chief port of the province. *Giurgevo,* opposite Rustchuk, of which it is the port. Here the Russians were defeated by the Turks in July 1854. *Krajova,* a flourishing commercial town on the Schyl, the capital of Little Wallachia, with an active trade in salt. *Oltenitza:* here the Russians were defeated by the Turks 4th November 1853. *Tergovist,* the former capital of the province. *Tchernecz* (Tierna), on the Danube, nearly opposite Gladova, and not far from Trajan's bridge. *New Orsova,* on an island in the Danube, 4 miles above the Iron Gate; a station for steam-packets. *Rimnik:* here the Austrians and Russians, under Suwarrow, defeated the Turks in 1789. *Jassy* or *Yassy,* the capital of the province Moldavia, and the residence of the hospodar or governor, covers a large area, the houses being interspersed with gardens. It was nearly destroyed by fire in 1822, and its fortified palace was burned in 1827; but the portion of the city that has been rebuilt is clean and healthy. It contains numerous churches, a college, printing establishments, a society of natural history; and maintains an active commerce in agricultural produce. *Ismael,* a strongly fortified town, stormed by the Russians, under Suwarrow, in 1790, but ceded to Turkey in 1855. *Galacz* (pronounced Galatsh), the only port of Moldavia, and the place of export and import for the whole province, and the chief medium of commerce between Germany and Constantinople. *Kilia,* a fortified town on one of the mouths of the Danube, ceded to Turkey by the Treaty of Paris, 1855. *Bolgrad,* on the new boundary-line between Moldavia and Russia. *Nyamtz* has large annual fairs, and a shrine of the Virgin, which attracts numerous pilgrims.

Candia or *Megalo-Kastro* (Matium), capital of the island of Crete, was fortified by the Venetians, from whom it was taken by the Turks in 1669. The population is almost wholly Mohammedan. *Canea* (Cydonia), the principal commercial town in the island.

8 **Capes.**—Rodoni and Linguetta, on the W. coast of Albania; St George and Kissobo, S.E. of Thessaly; Paillouri, Drapano, and Monte Santo, the extremities of three peninsulas on the coast of Macedonia; Helles Bournu, at W. entrance of the Dardanelles; Emineh, N.E. of Roumelia; Kalagria, or Gulgrad, E. of Bulgaria.

9. **Islands.**—Those belonging to Turkey are Sasseno, a small island at the entrance of the Gulf of Avlona, Crete, Scarpanto, and Caxo, at the mouth of the Ægean Sea; Lemnos or Stalymene, Imbros, Samothraki, Thaso, and Strati, in the N. of the Ægean Sea. The Ionian Isles (Corfu, Kephalonia, Santa Maura, Thiaki, Zante, Cerigo, &c.) form a republic dependent on Great Britain; while the islands on the coast of Asia Minor, as Lesbos, Scio, Samos, Rhodes, and Cyprus, belong rather to Turkey in Asia.

10 **Seas, Gulfs, and Straits.**—The Adriatic and Ionian seas, between Albania and Italy; Æonian Sea, between Thessaly and Anatolia; Sea of Marmora, between Thrace and Asia Minor; Black Sea, between European Turkey and Mount Caucasus. Gulfs of Drin, Avlona, and Arta, W. of Albania; Strait of Otranto, joining the Adriatic and Ionian seas; Channel of Corfu, between Corfu and the mainland of Albania; Gulf of Volo, S.E. of Thessaly; Gulfs of Salonika, Cassandra, Monte Santo, Contessa or Orphano, Enos, and Saros, S. of Roumelia; the Dardanelles or Hellespont, connecting the Ægean Sea with the Sea of Marmora; the Bosporus, or Channel of Constantinople, uniting the Sea of Marmora with the Black Sea; Gulf of Burgas, N.E. of Bulgaria.

11. **Surface and Mountain-System.**—The greater part of the surface of European Turkey is an undulating region of hills and valleys, mountains and table-lands, of moderate elevation. There are three principal mountain-ranges, which divide the country into three almost equal climatic regions, and which

form the great watersheds between them—viz. 1. the Western range, separating the basins of the Adriatic and Ionian Seas from those of the Danube and Ægean Sea; 2. The Balkan range, or Mount Hæmus, between the Danube and the Ægean Sea; and, 3. The Eastern Carpathians, between the basins of the Theiss and Lower Danube.

THE WESTERN OR HELLENIC RANGE, consisting of—1. *The Dinaric Alps*, in the N.W., forming a continuation of the Julian Alps of Illyria, and separating the Adriatic from the basin of the Save: highest summit, Mount Dinara, 7458 feet high. 2. *Grammos* or *Mount Pindus*, between Albania on the W. and Roumelia and Thessaly on the E.; it is connected on the N. with the Dinaric Alps, and on the S. with Mount Othrys (and the Olympian chain) on the Grecian frontier, and forms the watershed between the Ionian and Ægean seas. Highest summits—

	Feet.
Mount Metzovo, in the centre of the range, .	8950
Mount Othrys,	5700
Mount Pelion,	5310
Mount Ossa,	6407
Mount Olympus, the culminating-point of the tire peninsula,	9749
Mount Ida, in Crete,	7674

THE BALKAN (or Mount Hæmus), branching off from the Hellenic range in the N.E. of Albania, pursues an easterly direction between Roumelia and Bulgaria, and terminates in Cape Emineh, in the Black Sea: it consists of two main branches—1. The *Balkan* proper, or principal range (anc. *Hæmus*), including the Great Balkan, 874 feet; Emineh-Dagh, 7500 feet; Tchar-Dagh (*Mount Scardus*), 700 feet. 2. *Despoto-Dagh* (anc. *Rhodope*), in the W. of Thrace, separating the basin of the Karasu from that of the Maritza: Rilo-Dagh or Rhodope, 8313 feet; Mount Athos, in the extreme S.E. of Macedonia, 9628 feet. Height of snow-line on Mount Olympus, 9000 feet.

THE EASTERN CARPATHIANS, separating the Danubian Principalities from the Hungarian provinces of Austria, and the Theiss from the Lower Danube. The highest summits are in Austria (which see).

MOUNTAIN-PASSES.—Trajan's Gate and the Shumla Pass, in the Balkan range; the Iron Gate, Vulcan Pass, Rothenthurm Pass, Boza Pass, in the East Carpathians, between Wallachia and Transylvania; Gymes Pass, between Moldavia and Transylvania.—(See p. 315)

12. **Principal River-Basins.**—As the areas of the different river-basins have not been sufficiently determined, we must here content ourselves with assigning the lengths of the rivers, including windings, and the capitals of provinces in their basins.

BASINS.	Length in English miles.	CAPITALS.
Narenta,	140	Mostar.
Boyana,	65	Scutari, Cetigne.
Salembria,	110	Larissa.
Vardar,	170	*No capital.*
Straumnitza or Karasu,	130	*No capital.*
Maritza,	260	*(Adrianople.)*
Sea of Marmora, basin of,	160	CONSTANTINOPLE.
Danube,	1725	Silistria, Belgrade, Jassy, Bucharest, Bosna-Seraï.

13. **Table of Rivers and Towns.**—The following table comprises sixty-three of the principal rivers of Turkey, of which twenty-two enter the sea directly, and forty-one indirectly. Though the Danube with its tributaries was given at length under Austria, we insert again here, for the convenience of the student, the portion of its basin belonging to Turkey. The ancient names of the rivers are given within parentheses.

Basins inclined to the Adriatic and Ionian Seas.

Rivers.	*Towns.*
Narenta (Naro),	*Poschitel,* MOSTAR.
Brigava, *l*	*Stolacz.*
Bistritza,	*Imoschi* (in Dalmatia), *Livno.*
Tribinschucza,	Trebigno.
Boyana (Barbana),	SCUTARI, CETIGNE, n.
Moraka,	*Podgoricza.*
Drin (Drilo),	*Alessio, Ochrida.*
White Drin,	Prisrend, n. Jacova.
Jantra or Jacon,	Kroya, Tirana.
Scombi (Gonusus),	*El Bassan, Koridja.*
Ergent or Beratina (Apsus),	Berat.
Vojutza (Aous),	Avlona or Valona, *Carbonara, Tepeleni, Konicza.*
Deropuli, *l*	*Argyro-Kastro.*
Pistricza,	Delvino or Delbino.
Kalamas (Thyamis),	*Philates.*
Acheron,	*Parga,* n., *Margariti, Souli,*
Arta G. and R.,	*Prevesa, Arta,* Janina, *Metzovo.*
Co. Albania,	*Antivari, Dulcigno,* Durazzo.

Basins inclined to the Ægean Sea.

Rivers.	*Towns.*
Gulf of Volo,	*Armyro, Volo.*
Salembria (Peneus),	LARISSA or Yenitcher, *Ambalakia,* Trikhala, n.
Satalge,	*Satalge* or *Pharsala.*
G. of Salonika,	Salonika (Thessalonica).
Karasu (Haliacmon),	*Veria,* n., Servia, *Kastoria,* n.
Mauronero (Lydias),	Alaklissi (Pella), *Yenidja-Vardar.*
Vardar (Axius),	Vodena (Edessa), n., *Kuprili,* Uskup.
Braunista, *l*	*Istib, Karatova.*
Tzerna (Erigonus),	Monastir or Bitolia.
Sarpiaki, *l*	*Komanova.*
Straumnitza or Kara-Su (Strymon),	*Neokhorio* (Amphipolis), Seres, *Demir-Hissar, Petrovitch, Kostendil* or *Ghiustendil, Dubnicza.*
Angites, *l*	Filibi (Philippi), *Drama.*
Mesto-Karasu (Nestus)	*Rasluk.*
Gulf of Kavallo,	*Eski-Kavallo* (Neapolis).
Gulf of Lagos,	*Lagos.*
Maritza (Hebrus),	*Enos,* n., *Ipsala, Demotika,* Adrianople, *Tchirmen, Tchirpan,* Philippopolis or Filibi, Tatar-Bazardjik, *Kostanitz, Samakov.*
Erkeneh, *l*	*Hirepoli, Seraï.*
Tearus,	Kirk-Kilissia.
Tondja (Tonzus), *l*	Adrianople, *Janboli,* Islivni or Selimnia, Eski-Sagra, n., Kazanlik.
Dardanelles (Hellespont),	Gallipoli.
Sea of Marmora (anc. Propontis),	*Ganos,* Rodosto, *Erekli.*
Channel of Constantinople (Bosporus),	CONSTANTINOPLE, with its suburbs, *Galata, Tophana,* &c.

Basins inclined to the Black Sea.

E. co. Roumelia,	*Midia, Visa,* n., *Ainada* or *Inada, Burgas.*
Kamtchik,	Shumla, *Eski-Djuma.*
Pravadi,	Varna, *Pravadi, Yeni-Bazar.*
Co. of Bulgaria,	*Baltshik, Kustendji,* Baba-Dagh (on *Lake Rassein.*)
Danube (Danubius),	Baba-Dagh, (*on Porticha Mouth*), *Tultcha* (*on Sulina Mouth*), Kilia and Ismael (*on Kilia Mouth*), *Isaktchi, Reni,* Galacz, Ibrail or Brahilov, *Matshin, Hirsova, Rassova,* SILISTRIA, *Oltenitza, Turtukai, Giurgevo,* Rustchuk, Sistova, Nicopoli, Widdin,

Basins inclined to the Black Sea (continued).

Rivers.	*Towns.*
Danube (continued),...	*Kalefat*, *Tchernecz*, *Gladova*, Semendria, Pancsova, BELGRADE, &c.—(See under "Austria.")
Jalpuch, *l*	Ismael, *Bolgrad.*
Pruth, *l*	*Reni*, *Botuchany*, n., Czernowitz.
Baglui,	JASSY or YASSY.
Sereth, *l*	Galacz, *Adjiud*, n., *Baku*, *Roman.*
Moldava,	*Nyamtz.*
Bistritz,	*Bistritz.*
Jalomnitza, *l*	*Hirsova*, *Ploesti.*
Argish,	*Oltenitza*, *Tergovist*, *Argish.*
Dumbrovitza, *l*	BUCHAREST.
Lom,	*Osman-Bazar*, *Rasgrad*, n.
Jantra,	Tirnova.
Alt or Aluta, *l*	Nicopoli, *Slatina*, *Rimnik*, Kronstadt, n. (*in Austria*).
Isker,	Sophia.
Schyl, *l*	Krajova.
Morava (Margus),	*Passarovicz*, *Kragojevacz*, n., *Kruschevacz*, Nissa, n.
West Morava,... *l*	*Karanovacz.*
Ibar,	Novi-Bazar, Pristina, *Kossova.*
Save,	BELGRADE, *Schabacz*, &c.
Kolubara,	*Valievo*, n.
Drina,	Zvornik, *Belina.*
Bosna,	*Doboi*, *Maglai*, *Traunik*, n.
Migliazza,	BOSNA-SERAÏ.
Verbas,	*Banialuka*, *Juicza.*
Unna,	*Gradiska*, Novi, *Bihacz*, *Dubicza.*
Sanna,	Novi, Kliutch.

14. **Lakes.** — These, though somewhat numerous, are all very small, except Lake Ochrida, 18 miles by 8, and Lake Scutari, 20 miles by 4. The other principal lakes, arranged in the order of the river-basins to which they belong, are as follows :—

Basin.	*Lakes.*
Boyana,	Scutari, in the N.W. of Albania.
Drin,	Ochrida, between Albania and Macedonia.
Arta,	Janina, in S.E. of Albania, 2500 feet above the sea.
Salembria,	Karla (ancient Boebis), in E. of Thessaly.
Karasu,	Kastoria, in W. of Macedonia.
Mauronero,	Yenidja, in S. of Macedonia.
Straumnitza,	Betchik and Takinos, in the S.W. of Roumelia.
Danube,	Rassein (a large lagoon formed by the Porticha Branch), and Jalpuch, Kagul, &c., N. of the Kilia branch.

15. **Climate.**—Owing partly to the elevation of the surface, and partly to its exposure to N.E. winds from the interior of Russia, the climate of Turkey is greatly more severe than its latitude would seem to indicate; and it is, moreover, subject to sudden and violent fluctuations.

Though few of the mountains reach the limit of perpetual congelation, snow lies during the greater part of the year in the recesses of the highest elevations; while in the plains of Wallachia and Moldavia the thermometer descends sometimes to 15° below zero, and the sledge is used for travelling, as in Russia. A great portion of Albania, being protected by mountains from N.E. winds, enjoys a delicious climate; but this region is liable to be visited by destructive earthquakes. In the rocky districts of the interior, and in the maritime valleys of the W., the summer is insupportably hot. Around the capital the climate is extremely variable, especially in winter and spring—snow and hard frost alternating with mild weather, and the temperature sometimes changing to the extent of 30° in a single night. At the mouth of the Danube the winter temperature is the same as in the interior of Iceland. The isotherm for January, which passes through the centre of that island and the S.W. of Norway, through Holland and Frankfurt-on-the-Main, crosses the Danube at Regensburg in Bavaria, and the Theiss at Szegedin in Hungary, proceeds along the northern frontier of Wallachia, and quits the continent at Lake Rassein in Bulgaria. At Constantinople the mean temperature for the year is 56°.3, for winter 40°.8, and for summer 71°.2. The annual quantity of rain is moderate over the entire peninsula, rarely exceeding 32 inches.

16. **Geology.**—The geology of Turkey has not been very accurately explored; but, so far as presently known, CRYSTALLINE ROCKS cover almost the entire area, bounded by the Balkans, Mount Pindus, and the basin of the Maritza, together with the northern part of the Dobroudscha, and a somewhat extensive tract S. of the Gulf of Burgas. SILURIAN strata do not occur, but N.W. of Constantinople there is a small tract of UPPER PALÆOZOIC; another in the Balkan Mountains; and a third on the Danube, near Orsova. SECONDARY STRATA chiefly occupy the western provinces, together with a long belt N. of the Balkans, extending from the Morava to the Black Sea. Moldavia, Wallachia, and the northern part of Servia and Bosnia, all lying in the basin of the Save and lower Danube, belong to the TERTIARY series; as also the S.W. of Albania from the Scombi to the Gulf of Arta, together with almost the entire basin of the Maritza.

Minerals.—Coal is nowhere found, and the part of the series in which the coal-measures usually occur is believed to be altogether wanting. Iron of the best quality is very abundant, but the mines in actual operation are few in number. Many of the veins which traverse the crystalline schists are highly metalliferous, and lead yielding a considerable per-centage of silver has at different periods been wrought to some extent; but neither government nor people seem inclined to turn the mineral treasures of the country to good account. Other minerals are, gold in small quantities, copper, magnetic iron, marble, sulphur, salt, and alum.

17. **Botany.**—Turkey belongs entirely to Schouw's *third* phytogeographic region, and its flora, therefore, corresponds to that of the other two great peninsulas of Southern Europe. This is the region of the *Labiatæ* and *Caryophyllaceæ*, being distinguished by the abundance of the plants belonging to these two orders, as also by a great number of evergreen trees. The forests are composed chiefly of *Amentaceæ* and *Coniferæ*, and the copses of *Ericaceæ*, or the heath tribe. A great difference exists between the vegetation of the basin of the Danube and that of the provinces S. of the Balkans. In the former the forests consist of the pine, beech, oak, lime, and ash, besides the apple, pear, cherry, and apricot, which cover the whole surface throughout extensive districts; whereas in the latter these trees are confined to the sides of the mountains, while the lower grounds exhibit the plane, maple, carob, almond, sycamore, walnut, and chestnut trees—besides the box, myrtle, laurel, and numerous evergreens. Large forests of fir and pine occur in Bosnia and Croatia; the olive thrives in the maritime plains of Albania, where also the orange and citron are cultivated; and the vine in all the provinces, though in the valley of the Danube the fruit is deficient in saccharine matter. Fruit-trees of numerous species are extremely abundant, especially in Albania; while the southern base of the Balkans, especially the plain of Adrianople, is remarkable for the abundance of its roses, from which the celebrated *attar* or otto of roses is distilled.

Agriculture.—The system of agriculture pursued is of the rudest description, and only a small portion of the country (probably not more than a sixth) is under cultivation; though the soil is in most parts abundantly fertile, and better adapted for the growth of the cereals than any other part of Europe. Maize is cultivated in the S.; rice, cotton, rye, and barley in the central parts; wheat, barley, and millet in Moldavia.

18. **Zoology.**—The fauna of the Hellenic peninsula does not differ very materially from that of the Italian. It comprises 65 MAMMALS, 42 of which are carnivora, 14 rodentia, 8 ruminantia, and 1 pachyderm—viz., the wild boar. The carnivora include 22 species of bat, 2 plantigrade animals—viz., the bear and badger—and six digitigrada—viz., the marten, wolf, dog, fox, civet, and wildcat. The fourteen rodents embrace the squirrel, beaver, hedgehog, vole, mouse, rat, and three species of hare. The ruminants include the fallow-deer and roe, the antelope, chamois, and wild-ox. The lion, anciently found on Mount Olympus, has long been extirpated. BIRDS comprise 259 species, of which 31 are birds of prey, 15 climbers, 100 songsters, 12 gallinaceous birds, 64 waders, and 37 swimmers. The bustard and partridge abound in the valleys, and game is plentiful in the mountains. The REPTILES are 27 in number, embracing 2 land-tortoises, 7 lizards, 6 frogs, and 12 serpents. FISHES.—The fishes of the Mediterranean, so far as presently known, are 444 in number, and they nearly all occur on the western and southern coasts of the Hellenic peninsula. Tunny, coral, and sponge fisheries are characteristics of the Mediterranean. Trout and other fish

are plentiful in the rivers; and leeches, which abound in the marshes, form an important article of exportation. The fishes and other inhabitants of the Black Sea are regarded as a colony from the Mediterranean, and though fewer in number, do not greatly differ in species.—(See under "Italy," par. 18.)

19. **Ethnography.**—The population of European Turkey belongs to three great races—Mongols, Sclavonians, and Greco-Latins, the two latter being of the Caucasian stock. Besides these there are great numbers of Armenians, Jews, Gypsies, and Franks, or foreigners, from the different countries of Europe. The Turks, or more properly the Osmanlee (being only a single branch of the great Turkish family, and deriving their name from Osman or Othman, the ancestor of the present ruling dynasty, and founder of the Turkish Empire from A.D. 1288 to 1326) are the ruling race, though probably not exceeding 1,500,000 in number. They form a compact body only in the province Roumelia, E. of the Vardar; but they are found in the towns in most parts of the empire, and are also numerous in particular districts of Albania and other localities S. of the Balkans. The great family to which the Osmanlee belong, are distinguished from other nations by their language, customs, and physical character. They are thinly spread over an immense extent of Asia, from the desert of Gobi to the shores of the Mediterranean, and from the northern part of Siberia to the Persian Gulf. In Southern Siberia, Turkestan, and the greater part of Asia Minor, they form a compact population; in other places, as in Syria, Armenia, Mesopotamia, and European Turkey generally, they are much less numerous than the original inhabitants, who are called *rayas*. According to the *Physical Atlas*, all the western provinces of Turkey are peopled by nations of pure Sclavonic origin, together with Servia, Bulgaria, part of Moldavia, and Thessaly. The Wallachians, part of the inhabitants of Moldavia, and the Greeks, who are numerous in the southern provinces, are Greco-Latins.

Language.—Numerous languages are spoken in European Turkey. 1. Several *Sclavonic tongues*, in the basin of the lower Danube and on the Drave and Save—viz., the Bulgarian, Servian, Dalmatian, Croatian, and Bosnian (for which we must refer to "Europe," par. 21.) 2. *Greco-Latin tongues*—viz., the Romaic or modern Greek; the Wallachian, which is little else than a corrupted Latin, spoken in Wallachia, Moldavia, and Bessarabia; and the Albanian or Arnaute, the probable representative of a more primitive Illyrian, spoken along the eastern coast of the Adriatic. It is a living specimen of the primeval language of Southern Europe, retaining its original features unimpaired. It seems to have taken root in its present soil before the Greek and the Latin had any separate existence, and to bear the same relation to each of them as they bear to one another. 3. The *Arabic*, the language of the Koran, one of the principal branches of the Semitic family of tongues, but spoken here only by some of the higher classes of Mohammedans. 4. The *Turkish*, or more properly the *Turkish Osmanli*, as it is but one among the many dialects which go to form the Turkish language (as the Uighur, Jagatai, Kiptshak, Kirghiz, &c.), the others being spoken in Asia. This language forms an important member of the great Finno-Tartarian family—being nearly allied to the Finnish, Samoiede, and Georgian, on the one side, and the Mongolian, Tungusian, &c., on the other.—(See under "Asia," art. 21.) The Turkish nations occupy the western portion of that vast area formerly known as Great Tartary, which lies north of the civilised nations of antiquity. In the eastern part of their territory the Turkish tribes wander about, as of old, with their flocks and herds; though, like the Osmanlee of Europe and Asia Minor, they have attained to a large measure of civilisation. Their dialect is by far the richest and most polished of the group to which it belongs, though it has widely departed from the purity and simplicity which characterise its sister dialects in the East, whose affinity to the other members of the Ugro-Tartarian family is greatly more obvious. The Turkish Osmanli is the only language of this family possessing a multiplicity of compound tenses, or a substantive verb serving the purpose of an auxiliary. Its nouns have six cases, like the Latin; its verb, a series of complex derived conjugations; and its vocabulary, numerous foreign words, Persian, Arabic, Albanian, Greek, and Italian. Its groundwork, however, remains purely Turkish, and the language is highly polished, dignified, and graceful. Next to the Arabic there is no language so necessary for a European to acquire who wishes to travel through Asia, Africa, and South-Eastern Europe.

Religion.—The Osmanlee, together with a large portion of the inhabitants of Albania, are Mohammedans, numbering together 4,550,000; the Sclavonians and Greco-Latins, belonging to the Greek Church, 10,000,000; the Armenians, adhering to the Armenian Church, 100,000; Roman Catholics, chiefly Franks, 640,000; Jews, adhering to the law of Moses, 70,000; various minor sects and Gypsies, 140,000;—total, 15,500,000. The rayas, or non-Mussulman portion of the inhabitants, are subjected to the capitation or poll tax, which the Mohammedans do not pay. Formerly the punishment of death was inflicted on any one renouncing the religion of the Koran; but by a decree of the Sultan, issued in 1844, this sanguinary statute was abolished. By a subsequent decree, issued during the late war, all persecution on religious grounds is prohibited, and impartial toleration proclaimed throughout the entire empire. The bigotry of the Mohammedan population remains, however, unmitigated, though the legal obstacles to the spread of the truth are thus taken out of the way. Already have Bibles been numerously distributed, and the pure doctrines of the Gospel preached in very many localities.

Education.—The great mass of the people are almost wholly uninstructed; but the great number of employments for which learning is necessary acts as a stimulus to the desire for education. Schools in which the elements of knowledge are communicated are numerous, and to all the imperial mosques seminaries are attached in which aspirants to legal and sacerdotal offices are instructed. In 1847 the system of public instruction was remodelled: it now comprises—1. *Elementary Schools*, for reading, writing, arithmetic, and religious instruction; 2. *Middle Schools*, where Arabic, composition, and religious history (Islam) are taught; 3. *Colleges*, for various higher branches — as medicine, agriculture, naval and military science. Instruction at these is gratuitous, and parents are obliged to send their children to school on attaining the age of six years.

20. **Literature.**—The literature of the Turks is of ancient origin and highly respectable. During the reign of Othman and his immediate successors—that is, in the thirteenth and fourteenth centuries—it consisted for the most part of translations from the Arabic, Persian, Greek, and Latin, and more recently from the English, French, and German. These translations embraced works on history, geography, medicine, chemistry, mathematics, and the military science. But its original or native literature is of a higher order than is usually supposed.

POETRY.—Ashik Pasha, the oldest Turkish poet of renown, lived during the reign of Osman, A.D. 1288. The reign of Bayazid II. was distinguished by the two following poets: Nejati, considered the first lyric poet of his time, and Mesihi, whose "Ode to Spring" is highly celebrated. Baki, who died A.D. 1600, is generally regarded as the greatest Turkish poet. The last century produced Nabi Efendi, Seyed Refet, and Raghib Pasha, called "the Sultan of the poets of Roum."

HISTORIANS are very numerous, and some of them highly esteemed for their impartiality and the concise beauty of their style; as Ali, a contemporary of Baki, whose work, entitled "Mines of History," is one of the best sources concerning the earlier and middle periods of Turkish history. Other distinguished historians are Solak Zâde, Haji Khalfah, Edris, Naïma, Rashid, 'Asim Subhi, and Wassif (A.D. 1500-1774).

BIOGRAPHY. — The most distinguished in this department is Latifi, who wrote the lives of about 200 Turkish poets. Turkish literature has also been enriched by numerous works on morals, divinity, and philosophy. Their philosophy, which originated from the famous school of Bokhara, has a mystical character, and resembles in many points the speculative doctrines of Schelling, especially with regard to pantheism.*

21. **Government, &c.**—The Emperor, who is also called Sultan, Padi-Shah, and Grand-Signor, is regarded as absolute, but his power is practically very much restricted by the Grand Mufti or Sheik-ul-Islam, who is chief or head of the "Chain of Ulema," and the highest religious functionary. The principal officer of state is called the Grand Vizier, and the government

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* "Penny Cyclopædia," vol. xxv. p. 406.

of the different provinces is administered by pashas, who are absolute and tyrannical, having the power of life and death, of declaring peace and war, and in general of doing what they please. The provinces are sold to the highest bidder, and the successful pasha makes it his first business to reimburse his outlay by every species of extortion. Indeed, corruption pervades every department of the state—civil, military, and ecclesiastical; many of the provinces, especially in Asia, are reduced to deserts, and the entire empire threatens to fall speedily to pieces.

Army and Navy.—Before the late war with Russia, the imperial army amounted to 178,000 men, besides the armies of Wallachia and Moldavia, which numbered 61,000, and a reserve force of 125,000; total, 365,000. The navy, in 1853, comprised 70 vessels, manned by 25,000 sailors, and carrying 4000 guns; but the Russians destroyed many of the ships at Sinope, and others have since foundered in the Black Sea.

The *Public Debt* in 1853 amounted to £5,000,000 sterling; the *Revenue* to £6,714,678; and the *Expenditure* to £6,898,165.

22. **Commerce, Manufactures, &c.**—The commerce of Turkey is considerable, but is chiefly conducted by Greeks, Armenians, Jews, and foreign nations, especially the English.

The trade carried on between Turkey and England, formerly large, has, since the war with Russia, greatly increased. In 1855 the imports from Britain to Turkey amounted to £5,639,000; while in 1852 they did not exceed £2,500,000. Constantinople is the chief seat of the foreign trade, and next to it is Salonika. In 1851 the amount of tonnage that entered Turkish ports was 1,689,325 tons; cleared, 1,705,968 tons. The chief *Imports* are corn, articles of colonial produce, and a great variety of manufactured articles. The *Exports* consist principally of raw materials, drugs, and fruit, with some of the finer articles of Oriental taste and skill, which are chiefly derived from the Asiatic provinces. The *Manufactures* comprise saddlery, copper and tin utensils, firearms, swords, coarse woollen cloths, silks, shawls, carpets, cotton and linen spinning, cotton-printing, dyeing, tanning, embroidery, and the distillation of brandy from prunes.

23. **Internal Communication.**—There are no canals or railways in European Turkey; very few of the roads are practicable for carriages, and horses or mules are generally employed for the conveyance of passengers and goods. On the most frequented lines of road are placed caravanserai or *khans*, which are large buildings with an open courtyard in the centre, for the accommodation of travellers. The Danube is the great highway of commerce for the northern provinces, especially since its several mouths came to be embraced within the boundary of Turkey.

RUSSIA.

THE Russian Empire is the largest state in the world, with the exception of the British, which considerably exceeds it. In addition to its European territories, which occupy more than a half of the continent, it embraces one-third of Asia and a large section of North America. It is 7000 miles long from E. to W., has an average breadth of about 1500 miles, and an area exceeding 8,000,000 square miles—being nearly one-sixth part of the land surface of the globe. Its population is remarkably small in proportion to its prodigious extent, being only 65,476,000, or about 8 persons to each square mile. The British Empire, with an area of 8,503,960 square miles, has 208,810,645 inhabitants; the Chinese Empire, with an area of 5,393,000 square miles, has 404,600,000 inhabitants; and the United States of America, with an area of 3,260,000 square miles, has a population of 23,191,000. The following table presents at one view the area and population of the different sections of this vast empire:—

	Area in English Square Miles.	Population in 1851.
Russia in Europe,	2,090,000	60,362,000
Transcaucasia,	84,403	2,173,584
Siberia,	5,393,250	2,887,184
Russian America,	450,653	54,000
Total,	8,018,306	65,476,768

RUSSIA IN EUROPE.

1. **Position and Boundaries.**—N., the Arctic Ocean and Norway; W., Sweden, the Baltic, Prussia, Austria, and Moldavia; S., the Black Sea and the Caucasus; E., the Caspian, Independent Tartary, and Siberia, from which countries it is separated by the Ural river and mountains. Two governments (Perm and Orenburg) extend beyond the proper limits of Europe; but these, together with Transcaucasia and Circassia, we shall here regard as belonging to European Russia. The strictly European portion of the empire lies between lats. 40° 20′—70° N., and between lons. 18°—60° 45′ E., and so embraces nearly 30° of latitude, and 43° of longitude. Moscow, formerly the capital (lat. 55° 45′, lon. 37° 37′), is situated almost exactly in the centre, and is on the same parallel as Nain in Labrador, Edinburgh, Copenhagen, Ekaterinburg, and the middle of the peninsula of Kamtschatka, and on the same meridian as Onega, Kertch, Aleppo, Damascus, Medina, Gondar, and Quillimanè; while St Petersburg, the modern capital, is in the same latitude as C. Farewell, Lerwick, and Christiania.

2. **Form and Dimensions.**—If Poland be omitted, the form of European Russia is a tolerably regular oblong, having its greatest length from N. to S. about 2000 miles. The extreme breadth, in the latitude of Warsaw, is 1500 miles.

3. The **Coast-line** is about 5200 miles, being one mile of coast to every four hundred miles of surface. This seaboard belongs to four distinct seas—viz., the Arctic Ocean, 2000 miles; the Baltic, 1000; the Black Sea and Sea of Azov, 1000; and the European coast of the Caspian, 700 miles. The northern seaboard, however, is comparatively useless, being frozen for nine months in the year; but the deficiency is amply compensated by the numerous canals and navigable rivers with which Russia is intersected in all directions.

4. **Area,** 2,090,000 square miles; or, including Transcaucasia, 2,174,403. This area is only a little more than the fourth part of the entire empire, and yet it is seventeen times that of the British Isles, or about three-fifths of the entire area of Europe.

5. **Population.**—In 1851 the population was 60,362,000; or, including Transcaucasia, 62,535,584, being about 30 persons to the square mile. In 1725 the population of the entire empire was only 14,000,000; at the accession to the throne of the Emperor Nicholas, in 1825, it amounted to 51,000,000. This single fact most vividly represents the aggressive policy of Russia. During the last quarter of a century she has added 27 per cent to her population, while in the century previous she increased it fourfold.

6. **Political Divisions.**—European Russia, including the region beyond the Caucasus, but excluding Circassia, which is only nominally subject to Russia, is divided into seventy distinct governments. These are usually grouped into ten main sections, which, though no longer regarded as political designations, are so familiar to the Russians themselves, and are so frequently mentioned in the geographical, historical, and statistical details of the present day, that an acquaintance with them is still of great importance. The geographical position of these divisions is as follows:—

1. The Baltic Provinces, containing the capital, in the extreme west of the empire, between the Baltic Sea and the Gulf of Finland. 2. The Principality of Finland, in the north-west of European Russia, and chiefly between the Gulfs of Finland and Bothnia. 3. Muscovy, or Great Russia, in the north, north-east, and centre. 4. Czarate of Kasan, between Muscovy and Siberia. 5. Czarate of Astrakhan, between Kasan and the river Ural. 6. Russian Poland, in the south-west, between Austrian and Prussian Poland. 7. West Russia, south of the Baltic Provinces, and between Poland and Muscovy. 8. Little Russia, south of Great Russia. 9. Southern Russia, between Little Russia and the Black Sea. 10. Transcaucasia, south of Mount Caucasus, and between the Black Sea and the Caspian. Muscovy formed the original nucleus of the empire; the kingdom of Kasan was conquered from the descendants of Genghiz Khan in 1552; Astrakhan, formerly a Tartar kingdom, was annexed to Russia in 1580; the Ukraine, long a cause of strife between the Muscovites, Lithuanians, and Mongols, came into the possession of the Czars in 1686; the Baltic Provinces and Finland were

seized from Sweden, partly in 1721 and partly in 1809; Southern Russia was ceded by Turkey, partly at the Peace of Jassy in 1792, and partly at the Peace of Bucharest in 1812; the region of the Caucasus was wrested from Persia between 1723 and 1813; while Russian Poland was annexed at the three successive partitions of that ill-fated kingdom, in 1772, 1793, and 1795.

THE BALTIC PROVINCES, FOUR GOVERNMENTS.

St Petersburg or **Ingria.**—ST PETERSBURG 532, Cronstadt 25 n. (Neva), Zarskoë-Selo 10 n. (Ischora).

Towns between 5000 and 10,000 Inhabitants:—Schlüsselburg, Gatshina, Narva.

Esthonia.—REVEL or REVAL 24 (Gulf of Finland).

Livonia.—RIGA 67 (Düna), Dorpat 14 (Embach), Pernau 7 (Pernau).

Courland.—MITTAU 28 (Treider Aa), Libau 9 (W. coast).

PRINCIPALITY OF FINLAND, EIGHT GOVERNMENTS.

Finland.—*Helsingfors* 16,* *Abo* 13, Sveaborg 4 (Gulf of Finland).

Wiborg, *Uleaborg*, Biörneborg, *Wasa*, *Tavastehuus*, *Kuopio*, *St Michaels.*

MUSCOVY OR GREAT RUSSIA, NINETEEN GOVERNMENTS.

Arkhangel.†—ARKHANGEL 25 (Dwina).
Mezen, Pinega, Kem, Kola, Onega.

Olonetz.—PETROZAVODSK 8 (Lake Onega).
Witegra, Olonetz, Kargopol.

Vologda.—VOLOGDA 14, Ustiug-Veliki 13 (Sukhona).
Totma, Solvitchegodsk, Lalsk.

Novgorod.—NOVGOROD 16 (Volkhov), Staraja-Russa 9 n. (Lovat).
Valdai, Borovitchi, Tikhvin.

Jaroslav.—JAROSLAV 28, Uglitsch 9 (Volga).
Borisoglebsk, Rybinsk, Mologa, Rostov.

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* The eight towns in italics are the capitals of the eight governments of same name into which the Principality of Finland is now divided.

† The Russian alphabet now in use consists of 36 letters, 12 of which are vowels, 3 semi-vowels, and 21 consonants. Not a few of the sounds thus represented are peculiar to the Sclavonic languages, and cannot be adequately represented by the Roman or German alphabets. Hence the attempts made to render them into the other European tongues have not been altogether successful, and not a little discrepancy has arisen between the various orthographies employed—so much so, indeed, as to render any attempt at rules for pronouncing Russian next to useless. Those we give refer exclusively to the dialect of Great Russia. The vowels are very differently pronounced, according as they have or have not the tonic accent. In this respect it greatly resembles the English.

e initial=*a* in *make*, as Ekaterinburg (*Ai-kat'er-in-burg*).

cz, either the same as *ts* in *mats*, or as *ch* in *church*, as Czar, Toropecz (*Tsar* or *Tshar*, *Tor-o-pets'* or *Tor-o-petsh'*).

j initial=*y* in *yonder*, as Jaroslav (*Yar-o-slav'*).

j, medial or final=French *j*, or *s* in *pleasure*, as Nijni-Novgorod (*Nizh'ni-Nov-go-rod'*).

w=*v* in English, as Wolga, Twertza (*Vol'ga*, *Tvert'-za*).

Kostroma.—KOSTROMA 14 (Volga).
Galitch, Solgalitch.

Pskov.—PSKOV 10 (Velikaja), Toropecz 8 (Tiropa, *affl.* Düna).
Veliki-Luki, Porkhov.

Tver.—TVER 24, Rshev 9, Ostashkov 9 (Volga), Torshok or Torjok 15 (Twertza), Vishneï-Volotchok 10 (Tsna, *affl.* Twertza).
Staritza, Koliazin, Bijetsk.

Vladimir.—VLADIMIR 7 (Kliazma, *affl.* Oka), Murom 7, Melenki 6 n. (Oka).
Alexandrov, Pereslav, Shuya, Vixa.

Nijni-Novgorod.—NIJNI-NOVGOROD 25 (Volga and Oka), Pavlovo 8 (Oka).
Arzamas, Potshinki, Murashkino.

Smolensk.—SMOLENSK 13 (Dnieper), Viasma 12 (Viasma).
Dorogobusk, Roslavl, Poretchie Bieloï, Krasnoi.

Kaluga.—KALUGA 36 (Oka).
Borovsk, Kozelsk.

Tula.—TULA 55 (Upa, *affl.* Oka), Bielev 7 (Oka), Jefremov 7 (Metscha, *affl.* Don).

Riazan.—RIAZAN 9, Kasimov 7 (Oka), Pronsk 7, Mikhaïlov 7 (Pronia, *affl.* Oka).
Spask, Skopin, Saraisk.

Moscow.—MOSCOW 373 (Moskva, *affl.* Oka), Kolomna 13, Serpuchov 13 (Oka).
Borodino, Dmitrov, Troitskoé.

Orel or **Orlov.**—OREL 35, Mzensk 10 (Oka), Bolkhov 10 (Nugra, *affl.* Oka), Jeletz or Eletz 26, Livny 10 (Sosna-Bistraia, *affl.* Don).
Kromy, Karatchev, Briansk, Sievsk.

Kursk.—KURSK 26, Putivl 9 (Seim, *affl.* Dnieper), Belgorod 10 (Donetz, *affl.* Don), Korotcha 10 (Korotcha, *affl.* Donetz).
Rylsk, Miropolié, Oboian, Mikhaïlov, Novoï-Oskol, Staroï-Oskol.

Voronetz.—VORONETZ 19 (Vorona, *affl.* Don), Korotajak 7 (Don).
Pavlovsk, Ostrogoisk, Biriouché, Bobrov, Tavrov.

Tambov.—TAMBOV 20 (Tzna, *affl.* Moksha), Kadom 6, Spask 6 n. (Moksha, *affl.* Oka), Lipetsk 8, Kozlov 20 (Vorona, *affl.* Don).
Morshansk, Jelatom, Usman, Shatzk.

CZARATE OF KASAN, FIVE GOVERNMENTS.

Perm.—PERM 12 (Kama), Ekaterinburg 11 (Isset, *affl.* Tobol), Nijni-Tagilsk 22 (Taghil, *affl.* Tura, *affl.* Tobol).
Kungour, Neviansk, Irbit, Kushvinsk, Solikamsk.

Viatka.—VIATKA 7, Slobodskoï 6 (Viatka), Votka 9 (Ij), Sarapul 6 (Kama).
Kotelnitsh, Orlov, Jaransk, Ishevsk.

Kasan.—KASAN 57 n. (Volga), Tchistopol 7 (Kama).
Tcheboksari, Kosmod-Emiansk.

Simbirsk.—SIMBIRSK 18, Syzran 8 (Volga).
Alatyr, Karsan, Ardatov.

Penza.—PENZA 11 (Sura), Saransk 9 (Saranza, *affl.* Alatyr), Krasno-Slobodsk 8, Nijni-Lamov 7 (Moksha, *affl.* Oka).
Troitsk, Insara, Kerensk.

CZARATE OF ASTRAKHAN, FIVE GOVERNMENTS.

Saratov.—SARATOV 47 (Volga), Kuznetz 11 (Sura, *affl.* Volga).
Sarepta, Zaritzin, Kamyschin, Petrovsk, Volsk.

Samara.—SAMARA 12 (Volga).
Stavropol, Buzuluk, Bogoroslan.

Orenburg.—ORENBURG 15, Uralsk 13 (Ural).
Orsk, Ufa, Birsk, Troitsk, Tcheliabinsk.

Astrakhan.—ASTRAKHAN 45, Krasnoi-Yar (Volga), Guriev 2 (Ural).

Stavropol.—STAVROPOL 7 (Jachla, *affl.* Manytch), Kizliar 12, Mozdok 8, Ekaterinograd 5 (Terek), Georgievsk 3 (Podkuma).

KINGDOM OF POLAND, FIVE GOVERNMENTS.

Warsaw.—WARSAW 167 (Vistula), Lowicz 7, Ozorkow 5 (Bzura), Czentochow 6 (Wartha), Kaliscz 17 (Prosna).

Radom.—RADOM 9 (Radomka, *affl.* Vistula), Sandomir 4 (Vistula), Pinczow 5, Kielce 5 (Nida).

Lublin.—LUBLIN 17 (Bistricza, *affl.* Wieprz), Zamosz 5 (Wieprz), Siedlec 6 (Liwece).

Plock.—PLOCK 6, Praga 4 (Vistula), Pultusk 5 (Narew).

Augustowo.—SUWALKI 5, Wladislawaw 5, Kalwary 6 (Szezupa, *affl.* Niemen), Augustowo 7 n. (Bobr, *affl.* Narew).

WEST RUSSIA, EIGHT GOVERNMENTS.

Kovno.—KOVNO 20 (Niemen), Rossieny 6 (Dubisa), Vilkomir (Svizta).

Wilna.—WILNA 52, Smorgoni (Vilia *affl.* Niemen).

Vitebsk.—VITEBSK 17, Polotsk 11 (Düna).
Dünaburg, Velij.

Grodno.—GRODNO 16 (Niemen), Slonim 8 (Shtshara, *affl.* Niemen), Brzesc-Litovski 8 (Bug), Bialystock 11 (Bialy).

Minsk.—MINSK 24 (Svislotsch, *affl.* Berezina).
Bobruisk, Pinsk, Slutsk, Borissov.

Moghilev.—MOGHILEV 24 (Dnieper).
Staroï-Bykhov, Mstislavl, Tchaussy.

Volhynia.—JITOMIR 28 (Teterev, *affl.* Dnieper), Berditchev 20 (Guilopiat, *affl.* Teterev), Rowno 9, Ostrog 16 (Gorin, *affl.* Pripet), Staro-Konstantinov 11 (Slutsk, *affl.* Gorin), Dubno 9 (Irva, *affl.* Styr).
Zaslav, Lutsk, Kremenetz, Vladimir.

Podolia.—KAMINIETZ 16 (Smotrisch, *affl.* Dniester).
Mohilev, Vinnitza, Balta.

The Ukraine or Little Russia, Four Governments.

Tchernigov.—TCHERNIGOV 8 (Desna), Nieshin or Nejin 17 (Oster, *affl.* Desna), Gluchov 8 n. (Kleven, *affl.* Seim), Starodub 9 (Babintza, *affl.* Desna).

Berezna, Sosnitza, Novo-Sieversk, Baturin, Mglin.

Kiev.—KIEV 45 (Dnieper), Vasilikhov 8 (Stugma, *affl.* Dnieper).

Tcherkasi, Boguslav, Svenigorodka.

Poltava.—POLTAVA 16 (Vorskla, *affl.* Dnieper), Krementschug 17 (Dnieper).

Kobyliaki, Gadiatch, Mirgorod, Lubna, Lokhvitsa, Perejaslav.

Kharkov.—KHARKOV 35, Waluiki or Valki 9 n., Tchugujev 9 (Donetz), Akhtyrka 14 (Vorskla), Bogodukhov 10 (Poltawka, *affl.* Vorskla), Lebedin 11, Sumy 13 (Psiol, *affl.* Dnieper), Bielopol 9 n. (Seim, *affl.* Desna).

South or New Russia, Six Governments.

Bessarabia. — KISHENAU or Kichenev 43 (Buik, *affl.* Dniester), Akerman 26, Bender 10, Chotyn or Choczim* 13 (Dniester).

Kherson.—KHERSON 30 (Dnieper), Odessa 71 (S. coast), Nicolaïev 28 (Bug), Elizabetgrad 10 (Ingul).

Oczakov, Tiraspol, Berislav.

Taurida. — SIMFEROPOL 16 (Salghir), Karasubazar 15 (Karask, *affl.* Salghir), Eupatoria 15 (W. coast Crimea), Bakchi-Seraï 14 n. (Alma), Sebastopol (Inkermann).

Perekop, Balaklava, Kaffa or Theodosia, Kertch.

Ekaterinoslav.—EKATERINOSLAV 14 (Dnieper), Taganrog 18 (Sea of Azov), Rostov 11, Nakhitchevan 16 (Don).

Novomoskovsk, Pavlograd, Mariopol, Alexandrovsk, Azov.

Don Cossacks.—NOVO-TCHERKASK 17 n., Staroï-Tcherkask 14 (Don).

Tchernomoria or **Black Sea Cossacks.**—EKATERINODAR 3 (Kuban), Eisk or Jejsk 8 (Gulf of Taganrog), Taman (island of Taman).

Transcaucasia, Six Governments.

Shamkal.—TARKI 8 (Caspian).

Derbend.—DERBEND 12 (Caspian), Kuba 8 (Kuba).

Shemaka.—SHEMAKA 20 n. (Kur), Shusha 15 n. (Aras), Baku 5 (Caspian).

Erivan.—ERIVAN 15 (Zenghi, *affl.* Aras), Nakhchevan 12, Gumri or Alexandropol 10 (Aras).

Teflis.—TEFLIS or TIFLIS 50, Elizabetpol 12 n., Gori (Kur).

Kutais.—KUTAIS 4, Poti (Rion), Akhaltzikh 12 (Kur), Redut-Kaleh (Black Sea).

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* Ismael and Kilia, formerly in this province, were ceded to Turkey at the Treaty of Paris, 1856, and Russia now nowhere touches the Danube.

CIRCASSIA, ETC., FIVE SEMI-INDEPENDENT STATES.

Circassia.[*]—ANAPA 3, Pitzunda, Sukum-Kaleh (Black Sea).
Nagais.—NOVO-GEORGIEVSK (on an affluent of the Laba).
Kabarda.—KAZBEC, Dariel (Terek).
Tchetchnia.—SILBURY (on an affluent of the Terek).
Daghestan.—AKHULGO, Kurata (Sulak, *affl.* Caspian).

7. **Descriptive Notes.**—Including Transcaucasia and Circassia, this portion of the Russian empire contains three hundred and twenty towns of more than 5000 inhabitants; one hundred above 10,000; thirty-six above 20,000; nine above 50,000; and three (St Petersburg, Moscow, and Warsaw) above 100,000.

The BALTIC PROVINCES and FINLAND contain twenty-two towns of more than 5000 inhabitants; nine above 10,000; five above 20,000; and two (Riga and the capital) above 50,000.

ST PETERSBURG, the capital of European Russia and of the whole Russian empire, situated on both sides of the Neva, and on several small islands formed by the river, was founded by Peter the Great in 1703. It is a splendid city, with more than half a million inhabitants, and worthy of the great empire of which it is the metropolis. It lies low in swampy ground, is not easily drained, and is subject to frequent inundations from the river. The city is chiefly built of wood, but the palaces and public buildings are massive stone erections. Its commerce is extensive with all parts of the world; the annual imports are valued at £3,000,000, and the exports at £2,000,000; and there is regular steam communication with all the principal ports of Europe. The low islands of the Neva are strongly fortified, and the city is defended by the impregnable fortress of *Cronstadt*, the principal naval station of the empire. *Zarskoë-Selo*, the Versailles of Russia, contains the summer residence of the Czar. *Narva:* near it Charles XII. of Sweden, at the head of 8000 men, defeated an army of 80,000 Russians, in November 1700. *Revel* or *Reval*, a strongly-fortified seaport town, founded by Valdemar II., king of Denmark, in 1218, and afterwards sold to the Teutonic knights, was taken from Sweden by Russia in 1710, and was at one time the great emporium of the Hanseatic League for the trade with Novgorod. *Riga*, a large, fortified, and commercial city near the mouth of the Düna, was founded in 1200, and remained long one of the chief Hanseatic towns. It contains several colleges, a public library, and many scientific establishments. It exports largely flax and hemp. *Dorpat* contains a celebrated university, founded by Gustavus Adolphus in 1632. It is the chief school for the Protestant clergy in Russia. *Mittau* or *Mitau*, noted for its gymnasium and literary societies, has manufactures of linen and soap. *Helsingfors*, the capital of Finland since 1819, is the seat of a university which has a library of 80,000 vols.; it has a harbour suited for line-of-battle ships, and defended by the strong citadel of Sveaborg: trade in timber, corn, and fish. *Abo*, the former capital of Finland and the cradle of its Christianity, was at one time a celebrated and flourishing town, but was almost wholly ruined by fire in 1827. *Sveaborg*, a strong fortress taken from Sweden in 1789, was bombarded by the Anglo-French fleet in 1855.

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[*] The Circassians and other inhabitants of the Caucasus, though nominally included within the Russian dominions, retain to this day their wild independence, notwithstanding the most desperate efforts on the part of Russia to subjugate them. Contending against such fearful odds, however, the area of freedom is yearly lessening, and is probably destined ere long to be completely swallowed up. In 1859 their most illustrious champion, Shamyl, a Lesgian by birth, was captured and carried prisoner to St Petersburg; but hatred of Russia and an indomitable love of liberty burn as intensely as ever in the bosoms of these hardy mountaineers. Their present boundaries are the following:—north, the rivers Terek and Kuban; west, the Black Sea, from the mouth of the Kuban to the fortieth meridian; south, the crest of the Caucasus, from the fortieth meridian to the river Shulak, which separates it on the east from Derbend and Shamkal. The area embraced between these limits is very uncertain, but probably approaches to 40,000 square miles, while the population is estimated at 560,000. By far the most numerous of the many independent tribes of the Caucasus are the Circassians, who occupy the north-western portion of the territory; and next to them are the Abkhasas in the south-west; then the Midozeges or Kistes, east of the river Sunga; and the Ossetes or Irônes, who live east of the Kazbec. The people are physically among the finest of the human race: they are brave and

MUSCOVY contains one hundred and fourteen towns of above 5000 inhabitants; twenty-nine above 10,000; twelve above 20,000; and two (Moscow and Tula) above 50,000.

Arkangel, the most important city in the north of Russia, was the only seaport in the empire previous to the founding of St Petersburg, after which it began to decline; but it still remains the emporium of the trade with Siberia and the northern governments, and its merchants extend their negotiations as far as the frontiers of China. It is now strongly fortified, and the seat of a depôt of the Russian military marine. The harbour is closed with ice from September to July. *Petrozavodsk* has two spacious docks, an imperial cannon-foundry, powder-mills, and manufactures of silks. *Vologda*, a place of considerable trade, which is facilitated by the Dwina connecting it with the White Sea; it has extensive transit trade between the capital and Siberia, and a large annual fair in January and February. *Novgorod*, at one time the capital of an independent state, and from the twelfth to the fourteenth century a grand commercial entrepôt with 400,000 inhabitants, was taken by the Russians in 1477; the final blow was given to its prosperity by the founding of St Petersburg in 1703, which diverted the commerce of the Baltic into a new channel. *Jaroslav*, an important town on the Volga, at its confluence with the Kotorosl, has flourishing manufactures of cotton, silk, linen, russia leather, tobacco, and iron, copper, and bell foundries. *Kostroma* has a fine cathedral, fifty churches, and a bell-foundry, and is celebrated for its manufactures of russia leather. *Pskov*, an ancient town, which figures in Russian history as early as A.D. 903; has an

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hardy soldiers, but little civilised, and subsisting in part by brigandage and the sale of female slaves. Their religion is in general Mohammedanism, but some are Christians, especially the Irônes. They have no towns properly so called, but live principally in small hamlets situated far up the mountain-ravines. These consist generally of from forty to fifty hurdles covered with clay, and thatched with straw. The languages of these tribes are widely different from each other, and have been so from the earliest times. Pliny states that in the marketplace of one of the Colchian (*i.e.* Transcaucasian) towns named Dioscurias, no fewer than 130 interpreters were necessary for the transaction of business. "Allowing," says Dr Latham, "for exaggeration, let us halve the sum, then let us halve the remainder, on the doctrine that a moiety of the men of business were Greeks, Armenians, Syrians, and other nations foreign to Caucasus; the remainder will still be considerable." Recent philological researches, however, have established many points of affinity between these languages; and it has further been proved that in all the Caucasian tongues (Circassian, Georgian, Mingrelian, Immeretian, Suanic, Lesgian, Abassian, Inguschi, and some others) there are points of analogy connecting them with the Finnish and Samoiede on the one hand, and with the Chinese and other monosyllabic tongues on the other.

annual fair, a large export trade in hemp, flax, tallow, &c.; and is noted for its manufactures of russia leather. *Tver,* an important fortified town on the Volga, with extensive trade, owing to its position on the great road from Moscow to St Petersburg, and on a canal which establishes a connection between the Baltic and Caspian. *Vladimir,* the capital of the Grand-Duchy of Russia from 1157 to 1328, has a trade in fruit, and manufactures of linen and leather. *Murom* and *Vixa,* with valuable iron-mines, the latter being among the most extensive in Russia. *Nijni-Novgorod,* at the confluence of the Oka and Volga, noted for its great annual fair, the largest in the world, which begins on the 1st of July, and continues for eight weeks, at which time the population amounts to a quarter of a million: merchants from all parts of Europe and Asia attend, and the sales are valued at £22,000,000 sterling. *Smolensk* was a place of great importance as early as the ninth century; has been twice fearfully ravaged by the plague, and frequently by war; was taken by the French army after the famous battle of Smolensk, and a great part of it reduced to ashes. *Viasma:* here the French army was defeated by the Russians in October 1812. *Kaluga,* one of the most important manufacturing towns in the empire: its manufactures consist of muskets, cloth, oil, paper, cotton, leather, &c. *Tula,* the Birmingham of Russia, and the great seat of its iron manufactures, amongst which its great manufactory of arms deserves special mention: 70,000 muskets, 50,000 swords, besides pistols, bayonets, &c., are made annually, giving employment to 20,000 persons. *Riazan,* a small town on the Oka, possesses various manufactures. *Moscow* (Rus. *Moskwa*), formerly the capital of Russia, and still the second city in the empire, is situated near the centre of European Russia, 480 feet above the level of the sea. It has water-communication with all the principal cities and ports in the empire, and in the extent of its commerce far surpasses St Petersburg. The view of the city from a distance excites the admiration of all travellers: the innumerable towers, some with cupolas, either gilt or painted green, others rising in the form of minarets, and the many gardens and trees intermixed with houses, give it quite an oriental appearance. Its manufactures of cottons, woollens, silks, and carpets are immense, employing 40,000 weavers. Moscow was founded in the middle of the twelfth century; was sacked by the Moguls in 1233 and 1293; was the capital of Russia from the middle of the fourteenth century till 1703; was taken by the Poles in 1611, and burned by the Russian general after his defeat by the French army in 1812, thus compelling Napoleon to commence his disastrous retreat. *Borodino,* a village 75 miles W.S.W. of Moscow, celebrated for the victory gained by the French over the Russians, 7th September 1812. *Orel,* the entrepôt for the commerce between N. and S. Russia, being connected by canals and navigable rivers with the Baltic, Black Sea, and Caspian. *Jeletz* has extensive iron-mines in the vicinity. *Kursk* has manufactures of wax, leather, and tallow, and maintains an active commerce. *Voronetz* or *Voronej,* one of the principal commercial towns in the southern provinces. Here Peter the Great founded a palace, arsenal, and large dockyards; and here was built the first vessel of his fleet for the Sea of Azov; but most of the naval establishments have now been removed to Tavrov and Rostov. *Tambov,* strongly fortified, has a college and a military school for nobles, and an active general trade.

The CZARATES of KASAN and ASTRAKHAN contain fifty-nine towns of above 5000 inhabitants; thirteen above 10,000; four above 20,000; and one (Kasan) above 50,000.

Perm has a great trade in metallic products, which are wrought extensively in the neighbourhood, especially gold, platina, copper, and iron; and is the principal emporium of the trade between Russia and China. *Ekaterinburg*, on the Asiatic side of the Urals, is the centre of all the great ironworks belonging to the Crown. The inhabitants are largely engaged in mining, and in polishing topazes, amethysts, jaspers, and other precious stones obtained in the Urals. *Viatka* carries on great trade with Astrakhan, Arkhangel, and the capital, and has manufactures of anchors, gun-carriages, and iron machinery. *Kasan*, the great entrepôt of the commerce between Siberia, Bokhara, and European Russia, has been long celebrated for its educational establishments. *Simbirsk* maintains a flourishing trade in corn and fish. *Penza* has manufactures of leather and soap; iron, chalk, sulphur, and vitriol are found in its vicinity. *Saratov*, a large, fortified, commercial and manufacturing city on the Volga. *Samara*, the capital of a new government formed in 1850 out of parts of the governments of Saratov, Simbirsk, and Orenburg, contains some ironworks, and a trade in cattle, sheep, fish, and *caviare*, an article of food prepared from the roes of the sturgeon. *Orenburg*, a fortified city on the Ural, carries on an extensive trade with Bokhara and other parts of Central Asia. *Astrakhan*, at the mouth of the Volga, is a thriving commercial city, with manufactures of cotton, silk, leather, and shagreen: from its favourable situation it has become the entrepôt between Russia, Persia, and India. *Stavropol*, capital of new government of same name, is a small fortified town on the Jachla, with manufactures of soap and leather. *Kizliar*, a fortified town on the Terek, with an active trade in wine, which is raised in the vicinity.

POLAND and WEST RUSSIA contain fifty-five towns of above 5000 inhabitants; thirteen above 10,000; seven above 20,000; and two (Warsaw and Wilna) above 50,000.

Warsaw, the capital of Poland since 1566, and the great entrepôt of its commerce. Among its numerous splendid buildings is the palace of the ancient kings of Poland (now an imperial residence), containing the archives of the kingdom. It contains the largest Jewish population of any city in Europe. Two colleges represent its ancient university, which was suppressed in 1834, when its noble library of 150,000 volumes was removed to St Petersburg. Warsaw is strongly fortified, and is one of the principal stations of the Russian army. *Kalisz*, the most western town in the Russian dominions; near it the Poles defeated the Swedes in 1706. *Radom*, a walled town, defended by a castle. *Sandomir*, at the confluence of the San and Vistula, was formerly the residence of the kings of Poland. *Lublin* has extensive cloth-manufactures and trade in corn and Hungarian wines; also three large fairs, each lasting a month. *Plock* has manufactures of leather and skins, and an active transit trade. *Suwalki*, with 5000 inhabitants, half of whom are Jews. *Kovno* is famous for its mead, has an active trade in corn, and some linen-weaving. *Wilna*, the former capital of Lithuania. *Vitebsk*, built of wood and enclosed by walls, has a college for nobles, and manufactures of woollen cloth and leather. *Grodno*: here Stanislaus, last king of Poland, abdicated his crown in 1795. *Minsk* carries on a large trade in timber, iron, and russia leather, and has manufactures of woollen cloths and hats. *Moghilev* conducts a large export trade in agricultural products. *Jitomir* has a flourishing trade in woollens, silks, linens, salt, and agricultural produce. *Berditchev* has great commerce and four annual fairs, at which goods to the value of £600,000 are disposed of annually. *Kaminietz*, a fortified town, containing a theological seminary.

The UKRAINE and SOUTH RUSSIA contain sixty-four towns of above 5000 inhabitants; twenty-seven above 10,000; eight above 20,000; and one (Odessa) above 50,000.

Tchernigov, a very ancient town, containing numerous buildings of antiquarian interest. It was taken by the Tartars in 1239, after an obstinate resistance, and again by the Poles in 1617. *Kiev*, a fortified city, the most populous in the Ukraine, with an arsenal and a richly endowed university. It is noted for its ancient catacombs. *Poltava* or *Pultawa*, contains a monument to Peter the Great, who here signally defeated Charles XII. of Sweden, 27th June 1709 *Kharkov* or *Kharkova*, has numerous manufactures and extensive trade: its fairs are among the most important in the Ukraine. *Kishenau* has extensive manufactures of woollen cloths. *Akerman*, a fortified town on the Dniester, opposite Ovidiopol, has large exports of salt, obtained in the adjacent lakes. Here was concluded, in 1826, a famous treaty, exempting the Danubian provinces (Moldavia and Wallachia) from all but a nominal dependence on Turkey. *Bender*, taken and stormed by the Russians in 1770 and 1809: here Charles XII. resided for seven years after the battle of Poltava. *Chotyn*, a strongly fortified town of Bessarabia, was the northernmost fort of the Ottoman empire till the end of the eighteenth century, when it contained 20,000 inhabitants. Here the Russians defeated the Turks in 1739. *Kherson*, a fortified town, near the mouth of the Dnieper, and a place of great trade: near it is the tomb of Howard the philanthropist, who died here January 20, 1790. *Odessa*, a strongly-fortified seaport city, and the great emporium of Southern Russia, was founded in 1792. Its trade chiefly consists in the exportation of grain and in importing foreign goods. It has several hundred large grain-magazines, and is now the third commercial city in the empire: exports and imports valued at £5,000,000 sterling. It narrowly escaped bombardment in the late war with Russia. *Nikolaïev*, a fortified town at the confluence of the Ingul and Bug, the station of the Russian Black Sea fleet, and, since the destruction of Sebastopol, the principal naval arsenal of Russia in the Black Sea. *Simferopol*, 40 miles N.E. of Sebastopol, is the residence of all the Russian authorities in the Crimea. *Eupatoria:* here part of the Anglo-French army landed, on their way to Sebastopol, in September 1854. *Bakchi-seraï*, near the Alma, a small river, on whose banks the allied army obtained a brilliant victory over the Russians, 20th September 1854. *Sebastopol*, at the mouth of the Inkermann, formerly the Gibraltar of Russia, was founded by the Empress Catharine, in 1787, and made the chief naval arsenal for the Russian fleet. Immediately after Turkey declared war against Russia, a large Russian squadron issued from Sebastopol and destroyed the greater portion of the Turkish fleet at Sinope, November 13, 1853, when 4000 Turks perished. To avenge this outrage, and to check the numerous encroachments of Russia, England and France declared war against Russia in the following March. They sent one fleet to the Baltic, which destroyed Bomarsund, &c.; and another, together with a large military force, against Sebastopol. The landing was effected at Old Fort, about thirty miles south of Eupatoria, on the 14th September, 1854; and on the 20th September, 25th October, and 5th November following were fought the memorable battles of the Alma, Balaklava, and Inkermann: on the 8th September, 1855, the Malakoff Tower was taken, and the day following the Russians evacuated Sebastopol, which was reduced to a heap of ruins by the allied army. *Kertch:* many Greek and a few Roman remains have been found here; in its neighbourhood are the ruins of the city *Panticapæum*, once the residence of Mithridates. *Ekaterinoslav*, founded in honour of Catharine II. of Russia, in 1787, has manufactures of cloth, and an important annual wool fair. *Taganrog*, the great outlet for the produce of the countries drained by the Don. *Novo-Tcherkask*, built in a higher and healthier situation than Staroï-Tcherkask, formerly the capital, but less favourably situated in regard to trade: the latter carries on an active commerce in fish, iron, caviare, and wine. *Ekaterinodar*, capital of new province Tchernomoria, is a small town on the right bank of the Kuban.

TRANSCAUCASIA and CIRCASSIA contain only twelve towns of more than 5000 inhabitants; eight above 10,000; one above 20,000; and one (Teflis) above 50,000. The towns in Circassia are all mere villages.

Tarki, capital of new government Shamkal, situated on the west coast of the Caspian Sea. Considerable attention is paid here to the rearing of silk-worms. *Derbend* (anc *Albana*), formerly capital of province Daghestan, is situated at the entrance of a defile in the Caucasus, called by the ancients the "Albanian Gates." It was taken by Russia from Persia in 1795. It has little trade, but a great quantity of saffron is grown in the vicinity. *Shemaka* is celebrated for its silks, which are considered equal to those of French manufacture. *Baku*, a fortified seaport town, has the best harbour on the western side of the Caspian. It imports silk and cotton, shawls, indigo, &c., and exports naphtha, salt, and saffron. *Erivan*, formerly capital of the Persian province Azerbijan, is a fortified town on the Zenghi: being on the great caravan route between Teflis and Erzeroum, it has a considerable transit trade. It was taken by the Russians in 1827. *Nakhchevan* claims to be the oldest city in the world—tradition, and even its name, implying that the tenants of the ark disembarked here. It is noted for its insalubrity, and was nearly ruined during the last Russian war with Persia. *Gumri* or *Alexandropol*, a strong fortress at an elevation of 5800 feet, where the cold is often intense. *Teflis*, formerly the capital of the kingdom of Georgia, and afterwards of Russian Transcaucasia, is well fortified, and carries on an active trade in furs with Turkey and Persia. *Kutais*, anciently the capital of Colchis, and recently the principal town of Imeretia: the inhabitants are chiefly employed in vine and garden culture.

8. **Capes.**—Zelania, the N. extremity of Novaia Zemlia, lat. 75°; Kanin and Sviatoï, on either side of the entrance to the White Sea; Hango Head, S.W. of Finland; Spithamer and Domesnes, on either side of the entrance to the Gulf of Riga; Kinburn Point, N.W. of Taurida; Chersonese and Aia, the S. and S.W. extremities of the Crimea; Apsheron, in the Caspian, forming the E. extremity of Mount Caucasus.

9. **Peninsulas and Islands.**—The only important peninsulas are Shemokhovskaia, between the White Sea and the Gulf of Tcheskaia; the Crimea, in the S. of Taurida; the peninsula of Taman, which is rather a delta-island, formed by the mouths of the Kuban, between the Black Sea and the Sea of Azov; the Tongue of Arabat, between the Sea of Azov and the Putrid Sea. *Islands*—Vaigatch and Novaia Zemlia, N.E. of Arkhangel; Spitzbergen and the Seven Sisters, 10° N. of Norway; Kolguev, between Vaigatch and Cape

Kanin; Solovetskoĭ group, in the White Sea; Aland group, S.W. of Finland; Cronstadt, or Kotlinoĭ, near the head of the Gulf of Finland; Dago, Oesel, Worms, Nuko, and Moen, W. of Esthonia; Kin and Runo, in the Gulf of Riga; Zmievoĭ, or Isle of Serpents, opposite the mouth of the Danube.

10. **Seas, Gulfs, and Straits.**—Gulf of Kara, N.E. of Arkhangel; Vaigatch Strait, between Vaigatch I. and the mainland; Karskaia Strait between Vaigatch and Novaia Zemlia; Tcheskaia Gulf and White Sea, in the N. of Arkhangel; Varanger Fiord, between Arkhangel and Finmark; the Baltic, between Russia and Sweden; Gulf of Bothnia, between Finland and Sweden; Gulf of Finland, between Finland and Esthonia; Gulf of Riga, between Esthonia and Courland; Black Sea, between Russia and Asia Minor (it embraces the Gulf of Odessa and Lake Dnieprovskoi, S. of Kherson; Gulf of Perekop, N.W. of the Crimea; Sea of Azov, between Taurida and Tchernomoria; Gulf of Sivash or Putrid Sea, between the Crimea and the Tongue of Arabat; Strait of Kertch or Yenikaleh, uniting the Black Sea and Sea of Azov); Caspian Sea, separating Russia from Persia and Independent Tartary.

11. **Mountains, &c.**—Russia is the least mountainous country in Europe; for though two immense mountain-chains skirt its E. and S.E. frontiers, the latter containing several summits greatly loftier than Mont Blanc, the whole of the interior and west consists of one enormous plain, which extends from the Arctic Ocean to the Black Sea, and from the Baltic to the Caspian, with the single exception of the Valdai Hills, at the sources of the Volga.—(See under "Europe," par. 11.)

THE VALDAI HILLS, in the government of Novgorod, divide the waters flowing into the Baltic from those entering the Caspian. Highest summit, between Ostashkov and Valdai, 1100 feet.

THE URAL RANGE, separating European Russia from Siberia, and the basins of the Petchora and Volga from that of the Obi. Reckoning, as is usually done, from Orenburg to the Arctic Ocean, they traverse 18° of latitude; but as they in reality commence near the Sea of Aral, and have an insular prolongation in Vaigatch and the two islands of Novaia Zemlia, they extend over 30° of latitude, or 2000 English miles. The highest summits are the following:—

	Feet.
Konjak-Ofski, the culminating-point, near the centre of the range (lat. 59° 45′),	5397
Obdorsk (lat. 67°),	5286
Taganaĭ (lat. 55° 20′),	3592

The Urals nowhere attain the limit of perpetual congelation, and are usually of very moderate elevation. They are covered with dense forests, and are rich in gold, precious stones, and other valuable minerals. The mountain-passes are not remarkable; the only good carriage-road leads from Perm to Ekaterinburg.

THE CAUCASUS.—This vast chain, the loftiest in Europe, extends from Cape Apsheron, in the Caspian, to the peninsula of Taman, between the Black Sea and Sea of Azov, being a total distance of 750 miles. They separate Europe from Asia on the S.E., and the basins of the Kuban and Terek from those of the Kur and Rion.

	Feet.
Mount Elburz, the culminating-point of Europe, .	18,493
Mount Kazbek (lon. 44° 20′), ...	16,523
Elevation of line of perpetual snow, ...	11,000

Cultivation of grain extends from 7000 to 8000 feet. The existence of glaciers is uncertain. The range is covered with timber to a great height. The north side is abrupt and precipitous, but the south side descends by a succession of terraces. The Caucasus contain no active volcanoes, but they are frequently visited by earthquakes. They consist mainly of crystalline rocks; while the principal minerals are copper, lead, iron, sulphur, and coal.

The only *Mountain-passes* in the Caucasus that have been made practicable for carriages are—the Dariel Pass, from Mozdok to Teflis, by the valley of the Terek, 8000 feet high; and the Pass of Derbend, on the east coast.

The *Mountains of the Crimea* are a mere prolongation of Mount Caucasus: culminating-point, Tchatir Dagh, 5000 feet high.

12. **Principal River-Basins.**—These are 12 in number; their combined area embraces three-fifths of Russia, and they contain 57 out of its 70 capitals.

Name of Basin.	Direct Length.	Area in Geog. Sq. Miles.	Capitals in Basin.
Petchora, ...	500	48,800	*No capital.*
Mezen, ...	300	30,580	*No capital.*
Dwina, ...	500	106,400	Arkhangel, Vologda.
G. of Finland and R. Neva	500	150,000	Abo, Helsingfors, Tavastehuus, Wiborg, Kuopio, Revel, St Petersburg, Pskov, Novgorod, Petrozavodsk.
Düna, ...	400	33,440	Riga, Vitebsk, Mittau.
Niemen, ...	400	32,180	Grodno, Wilna, Suwalki.
Dniester, ...	400	23,040	Kaminietz, Kishenau.
Dnieper, ...	623	169,680	Kherson, Ekaterinoslav, Kiev, Moghilev, Smolensk, Poltava, Tchernigov, Kursk, Jitomir, Minsk.
Don, ...	468	163,420	Novo-Tcherkask, Stavropol, Kharkov, Voronetz.
Kur, ...	520	64,640	Teflis, Shemaka, Erzeroum.
Volga, ...	900	397,460	Astrakhan, Saratov, Samara, Simbirsk, Kasan, Nijni-Novgorod, Kostroma, Jaroslav, Tver, Perm, Viatka, Pensa, Riazan, Kaluga, Orel, Vladimir, Tambov, Moscow, Tula.
Ural,...........	550	83,200	Orenburg.

13. **Table of Rivers and Towns.**—The river-system of Russia belongs to four distinct river-basins—viz., those inclining to the Arctic Ocean, the Baltic, the Black Sea, and the Caspian. In the following table 168 rivers are enumerated, 33 of which are principal rivers, entering the sea immediately, the remainder being their affluents; and the total number of towns exceeding 5000 inhabitants, contained in their basins, is 320.

Basins inclined to the Arctic Ocean.

Rivers.	*Towns.*
Petchora,	No towns.
Mezen,	*Mezen.*
Dwina and Sukhona (from L. Kubinskoï),	ARKHANGEL, Ustiug-Veliki; Totma, VOLOGDA.
Pinega,	*Pinega.*
Vitchegda,	*Solvitchegodsk, Ust-Sysolsk.*
Jug,	Ustiug-Veliki.
Onega (L. Latcha),	*Onega, Kargopol.*
Kem,	*Kem.*
Tulom,	*Kola* (capital of Russian Lapland).

Basins inclined to the Baltic.

Tornea,	Boundary between Russia and Sweden.
Kemi (L. Kemi),	*Tornea*, n., *Kemijoki.*
Ulea (L. Ulea),	ULEABORG.
Gulf of Bothnia,	*Gamla-Carleby, Ny-Carleby*, WASA, *Christinestad, Biörneborg, Nystad.*
Lapoki (L. Nesi),	*Ny-Carleby, Tamerfors,* TAVASTEHUUS.
Gulf of Finland,	ABO, *Eknäs*, HELSINGFORS, *Sveaborg, Borgo, Lowisa*, WIBORG.
Neva (L. Ladoga),	Cronstadt, n., ST PETERSBURG, *Schlüsselburg, New Ladoga.*
Ischora, *l*	Zarskoé-Selo, *Gatshina.*
Woxen (L. Saïma),	*Kexholm*, KUOPIO.
Volkhov (L. Ilman), *l.*	*New Ladoga*, NOVGOROD.
Msta,	Novgorod, n., *Borovitchi.*
Shelon, *l*	*Porkhov.*
Lovat,	*Kholm*, Veliki-Luki.
Polista, *l*	Staraja-Russa.
Sias, *l*	*Tikhvin*, n. (on river of same name).
Svir (L. Onega), *l*	*Witegra*, PETROZAVODSK.
Olonka, *l*	*Olonetz.*
Luga,	*Jamburg, Luga.*
Narova (L. Peïpus),	*Narva*, PSKOV, n.
Embach, *l*	Dorpat.
Velikaja,	PSKOV, *Ostrov.*
Gulf of Finland,	REVEL, *Hapsal, Arensburg*, n.
Pernau,	*Pernau, Fellin.*
Boulder Aa,	RIGA, n., *Wenden.*
Düna,	RIGA, *Dünaburg*, Polotsk, VITEBSK, *Velij* or *Velish.*

Basins inclined to the Baltic (continued.)

Rivers.	*Towns.*
Treider Aa, *l*	RIGA, MITTAU.
Disna, *l*	*Vidzy.*
Kasplia, *l*	*Poretchie.*
Meja, *l*	*Bieloï*, n. (*on the Obschtscha*).
Toroptsa,	Toropecz.
Vindau,	*Windau, Goldingen.*
W. Co. Courland,	Libau.
Niemen,	Memel, Tilsit, KOVNO, GRODNO.
Szezupa, *l*	Wladislawaw, *Kalwary*, SUWALKI.
Dubisa,	*Rossieny.*
Niewieza,	*Keidaun.*
Vilia,	WILNA, *Smorgoni.*
Svizta,	*Vilkomir.*
Shtshara, *l*	*Slonim.*

N.B.—For the Pregel, Vistula, &c., see under "Austria."

Basins inclined to the Black Sea.

Dniester,	Akerman, *Tiraspol*, Bender, *Mohilev*, KAMINIETZ, n., *Chotyn* or *Choczim*, *Halicz* or *Galitch*, Sambor.
Buik,	KISHENAU (capital of Bessarabia).
Smotrisch, *l*	KAMINIETZ (capital of Podolia).
Sered, *l*	Tarnopol (in Galicia).
Zelota, *l*	*Brzezany* (Galicia).
Bistrica,	Stanislawaw (Galicia).
Tiszmanicka,	Drohobicz (Galicia).
Coast of Kherson,	Odessa, *Oczakov.*
Bug,	Nikolaïev, *Vinnitza.*
Ingul, *l*	Nikolaïev, Elizabetgrad.
Smiuka, *l*	*Svenigorodka.*
Jetran,	*Uman.*
Kodyma,	*Balta.*
Sab, *l*	*Lipovetz.*
Row,	*Bar.*
Dnieper,	KHERSON, *Alexandrovsk*, EKATERINOSLAV, Krementschug, *Tcherkasi*, KIEV, MOGHILEV, SMOLENSK, *Dorogobusk.*
Samara, *l*	*Novomoskovsk, Pavlograd*, n.
Vorskla, *l*	*Kobyliaki*, POLTAVA, Akhtyrka.
Poltawka, *l*	*Krasnokutsk*, Bogodukhov.
Psiol, *l*	Lebedin, Sumy, *Miropolie*, Oboian.
Khorol,	*Khorol, Mirgorod.*
Sula, *l*	*Lubna, Lokhvitsa.*
Ros,	*Boguslav, Skivra*, n.
Trubesh, *l*	*Perejaslav.*
Stugma,	*Vasilkhov.*
Desna, *l*	KIEV, TCHERNIGOV, *Berezna*, n., *Sosnitza, Novo-Sieversk, Briansk.*
Oster, *l*	Nieshin.

Basins inclined to the Black Sea (continued).

Rivers.	*Towns.*
Seim, *l*	*Baturin,* Putivl, Bielopol, n., *Rylsk,* KURSK.
Kleven,	*Glukhov,* n. (on the Jesmen).
Sudost,	*Pogar.*
Babrintza,	Starodub.
Nerussa, *l*	*Trubtchevsk, Dmitrovsk.*
Sieva, *l*	*Sievsk.*
Sueja, *l*	*Briansk, Karatchev.*
Teterev,	*Radomysl,* JITOMIR.
Guilopiat,	Bereditchev, *Makhnovka.*
Pripet,	*Mozyr, Pinsk,* n., *on the Pina.*
Slutsch, *l*	*Slutsk.*
Gorin,	Rowno, Ostrog, *Zaslav.*
Slutsch,	Starokonstantinov.
Styr,	*Lutsk,* Brody.
Irva,	Dubno, *Kremenetz.*
Soja, *l*	*Tcherikov, Mstislavl.*
Iput, *l*	*Suraj.*
Sudenka, *l*	*Mglin.*
Pronia,	*Tchaussy.*
Ostr, *l*	*Roslavl.*
Berezina,	*Bobruisk, Borissov.*
Svislotsch,	MINSK.
Gulf of Perekop,	*Perekop.*
W. Co. Crimea,	Eupatoria.
Alma,	Bakchi-seraï, n.
Tchernaya,	Sebastopol, *Inkermann.*
S. Co. Crimea,	*Balaklava, Kaffa* or *Theodosia.*
Strait of Yenikaleh,	*Kertch, Yenikaleh.*
Salghyr,	SIMFEROPOL, capital of Taurida.
Karask,	Kara-su-Bazar.
Sea of Azov,	*Berdiansk, Mariopol,* Taganrog, *Azov.*
Don (L. Ivanozero),	*Azov,* Nakhitchevan, Rostov, NOVOÏ-TCHERKASK, n., Staroï-Tcherkask, *Pavlovsk, Korotajak, Lebedian.*
Manytch, *l*	Staroï-Tcherkask.
Egorlik, *l*	STAVROPOL, n., on the Jachla.
Aksai,	Novoï-Tcherkask.
Donetz,	*Isium, Valki,* n., *Tchugujev, Voltchansk,* Belgorod.
Bakhmuta,	*Bakhmut.*
Oskol, *l*	*Waluiki, Mikhailovka, Novoï-Oskol, Staroï-Oskol.*
Kharkova,	KHARKHOV.
Uda,	*Zolotchev.*
Karotcha,	Karotcha.
Medviditsa, *l*	*Petrovsk.*
Khoper, *l*	*Borissoglebsk, Serdobsk.*
Bitiug, *l*	*Bobrov.*

Basins inclined to the Black Sea (continued).

Rivers.	*Towns.*
Sosna-Tikhaïa,	*Korotajak, Ostrogoshek, Birioutche.*
Voronetz, *l*	VORONETZ or VORONEJ, *Usman*, n., *Lipetsk*, Kozlov.
Sosna-Bistraïa,	Jeletz or Elets, Livny.
Metscha,	*Jefremov.*
Kuban,	EKATERINODAR, capital of Black Sea Cossacks.
W. Co. Circassia,	*Anapa, Pitzundra, Sukum-Kalé, Poti.*
Rion,	KUTAIS.

Basins inclined to the Caspian.

Kur,	TEFLIS or TIFLIS, SHEMAKA, n., Elizabetpol, n., *Gori*, Akhalzikh, n.
Aras,	Shusha, n., Nakhchevan, ERZROUM, n., on the Kara (Turkey).
Kara-Su,	*Ardabil* (Persia).
Vergush, *l*	Shusha.
Kotur,	Khoi (Persia).
Mahou,	*Bayazid* (in Turkish Armenia).
Zengui (L. Erivan), *l*,	ERIVAN.
Arpar or Kars, *l*,	Gumri or Alexandropol, n., Kars (Turkey).
Alazan, *l*	*Telavi.*
W. Co. Caspian,	*Baku*, DERBEND, TARKI, n.
Kuba,	*Kuba, Kulgat.*
Sulak,	*Akhulgo, Kurata.*
Terek,	Kizliar, *Mozdok*, *Ekaterinograd*, *Kazbec*, *Dariel*..
Kuma,	*Georgievsk*, n. (*on the Podkuma*).
Volga (L Seligher),	ASTRAKHAN, *Tchernoïyar*, *Sarepta*, *Zaritzin*, *Kamyschin*, SARATOV, *Volsk*, *Syzran*, SAMARA, *Stavropol*, SIMBIRSK, KAZAN or KASAN, *Tcheboksari*, *Kozmod-Emiansk*, *Murashkino*, NIJNI-NOVGOROD, KOSTROMA, JAROSLAV, *Ribinsk*, *Uglitsch*, *Koliazin*, TVER, *Staritza*, *Rshev* or *Rjev*, *Ostachkov*.
Samara, *l*	*Buzuluk* or *Bouzoulouk*.
Kinil,	*Bogoroslan.*
Kama, *l*	*Schistopol*, *Sarapul*, *Votka*, n., *Kungour*, n., PERM, *Solikansk*.
Viatka,	*Kotelnisch*, *Orlov*, VIATKA, *Slobodskoï*.
Jaron,	*Jaronsk.*
Ij,	*Ishevsk.*
Bi[illegible], *l*	*Birsk*, *Ufa*.
Sura,	*Alatyr*, *Karsun*, PENZA, Kusnetz.
Alatyr, *l*	*Ardatov*, *Potschinki*.
Saranga,	*Saransk.*
Oka,	NIJNI-NOVGOROD, *Pavlovo*, Murom, *Melenki*, *Jelatom*, *Kasimov*, *Spask*, RIAZAN, Ko-

Basins inclined to the Caspian (continued).

Rivers.	*Towns.*
Oka (*continued*),	lomna, Serpukhov, KALUGA, *Bielev*, Mtzensk, OREL or ORLOV.
Kliazma, *l*	VLADIMIR.
Kutchura, *l*	*Troitskoï-Monastyr.*
Tiosha,	*Murom, Arzamas.*
Moksha,	*Kadom, Krasno-Slobodsk, Troitsk, Spask, Nijni-Lomov.*
Tzna, *l*	*Morshansk*, TAMBOV.
Vad, *l*	*Kadom, Kerensk.*
Isa,	*Insara.*
Pronia,	*Spask, Pronsk, Mikhailov.*
Werda,	*Skopin.*
Moskva, *l*	Kolomna, MOSCOW, *Borodino.*
Ostr,	*Zaraisk.*
Nara, *l*	Serpuchov.
Protva, *l*	*Borovsk*, Vereja.
Lusha,	*Maloï-Jaroslavitz.*
Jizdra, *l*	*Kozelsk.*
Upa,	TULA.
Nugra,	Bolkhov.
Zusha,	*Mzensk.*
Kroma,	*Kromy.*
Kostroma, *l*	KOSTROMA, *Sol-Galitch.*
Kotorosth,	JAROSLAV, *Rostov.*
Sheksna (L. Bielo),	*Bielozersk.*
Nerl,	*Pereslav.*
Jakhrama,	*Dmitrov.*
Dubna,	*Troitskoï.*
Twertza, *l*	TVER, Torshok.
Tsna, *l*	*Vishneï-Volotchok.*
Ural,	Uralsk, ORENBURG, *Orsk, Verkhnii-Uralsk.*

14. **Lakes.**—Russia abounds in lakes, more especially in the north-western provinces. In general they arrange themselves in clusters around Lake Ladoga, the largest fresh-water lake in Europe, (area 6190 square miles), and, along with it, discharge their surplus waters into the Gulf of Finland. Following our usual arrangement, we find the following twenty-four large lakes in the thirteen river-basins under noted :—

Basin.	*Lakes.*
Dwina,	Kubinskoï, in Vologda.
Onega,	Latcha in Olonetz, and Voj in Novgorod.
Vig,	Vigo, in N. of Olonetz.
Kem,	Kunto, in W. of Arkhangel.
Kovdo,	Kovdo and Piavo, in N.W. of Arkhangel.
Tulom,	Imandra, in N.W. of Arkhangel.
Pasvig,	Enara, in N. of Finland.
Ulea,	Ulea, in N.W. of Finland.
Lapoki,	Nesijarvi, in S.W. of Finland.

Basin.	*Lakes.*
Neva,	Ladoga, Onega, Sego (in the W. of Muscovy); Saïma, Payana, Kuopio (in Finland); Peïpus and Ilmen, S. of the Gulf of Finland.
Don,	Ivanozero, in Tula; and Bolchoï-Ilmen, N. of the Caucasus.
Volga,	Seligher, in Tver; Bïelo in Novgorod.
Kur,	Erivan or Kukcha, in Erivan.

Of *Salt-water Lakes*, the Caspian is by far the largest in the world, having an area of 140,000 square miles; and even this is probably but a small part of the area it occupied in remote times, when it communicated with the Black Sea, Sea of Aral, and the other salt-water lakes of the central basin of Continental streams (see p. 69). Of the other salt-water lakes of European Russia, the principal are Lake Elton in Saratov, and Lake Baskutchask in Astrakhan.

15. **Climate.**—The great basin inclining to the Arctic Ocean is much colder than in corresponding latitudes in Scandinavia, the surface of a large portion of it being constantly frozen, notwithstanding the continual presence of the sun for many weeks' duration. Beyond the arctic circle mercury freezes in the month of September; even at St Petersburg (lat. 59° 56′) the thermometer sinks in December and January to 22° below zero; while in summer it rises to 85° or 90°; mean temperature, 40° Fahr. South of lat. 58° the mean temperature varies from 40° to 55°; the winters are much shorter than on the northern slope, but almost equally severe, while the summers are long and hot. Notwithstanding these striking extremes of temperature, the climate of Russia is favourable to health; diseases are not common, and human life very frequently attains to its maximum length.—(See pp. 32-36, and 83, 84.)

16. **Geology.**—The geology of Russia was until recently very uncertain, and the more accurate information now possessed is mainly due to Sir Roderick Impey Murchison and his coadjutors. For the particulars, however, we must refer to the "Geology of Europe," pp. 84-86.

17. **Minerals.**—These are numerous and very valuable, especially in the governments of Perm and Orenburg, on both sides of the Ural Mountains, which are richer in valuable minerals than any other mountain system in Europe. Numerous mines of gold, platinum, copper, magnetic iron, and salt are wrought, giving employment to a large and flourishing population. In Perm alone 100,000 persons are employed in mining operations. The greatest mineral wealth of the chain is on the eastern side, between lats. 54° and 60°; but the western side furnishes marl, gypsum, limestone, sulphur, and copper. Iron abounds in the southern provinces. Coal is deficient in the Urals, but prevails extensively in Southern Poland, and on the Oka is found associated with iron; lignite and brown-coal are found in the Crimea; in 1844 enormous deposits of it were discovered in the government of Moscow; while the coal-field on the Donetz, 100 miles in length, has long been celebrated. Amber is found in Poland and Lithuania; iron, lead, sulphur, arsenic, nitre, in Finland; salt and alum in many places; diamonds of small size, and other precious stones in the Urals.

18. **Botany.**—Russia is wholly included within Schouw's first and second phyto-geographic regions, which are, for the most part, separated by the arctic circle. The first or farthest N. is the home of the arctic alpine flora, described under "Europe," art. 19. The second region embraces all the rest of Russia and Central Europe, but its characteristics have been pointed out under other European countries. The most peculiar feature of its botany is found in its immense natural forests, which cover about 2-5ths of its entire surface. These abound chiefly in the central districts, between 52° and 60° lat., and are of most essential value to the inhabitants, affording fuel, shelter from the biting winds, and numerous useful articles, as timber, pitch, tar, turpentine, and potash. The trees which most frequently occur are the pine, Scotch fir, and other coniferous trees; also willow, birch, alder, ash, lime, elm, maple, together with oak and beech farther S. The northern limit of the coniferæ passes through the N. of Lake Imandra in Lapland, Cape Sviatoï, and the confluence of the Petchora and Ussa. The oak extends as far N. as Abo, Novgorod, Vladimir, Simbirsk, and Orsk; the vine to lat. 47½°; the beech to a line drawn from the mouth of the Vistula, south-eastward to the mouth of the Terek: the olive and orange refuse to grow in any part of the Russian Empire, except the Crimea, in the southern valleys of which the vine and mulberry, the olive, fig, pomegranate, and orange, all flourish in the greatest profusion. The botany of Russia has been less investigated than that of western Europe; a Swedish naturalist, however, gives the following synopsis of the flowering-plants of Finland:—262 monocotyledons, 704 dicotyledons; in all, 966 species.

Agriculture.—Over the whole empire agriculture is in its rudest state; the soil is extremely various, but generally good; and more corn is raised than is required for home consumption. The upper basin of the Volga is the most fertile part of Russia; and the governments of Nijni-Novgorod, Penza, Kasan, and Simbirsk, may be denominated the granary of the empire. Here the soil consists of a rich black mould of decayed vegetable matter, and is of surprising fertility. The Ukraine is also very fertile, and exports enormous quantities of wheat. Forests cover a great part of the surface of the Polish and Baltic provinces, but the former produce great quantities of corn and cattle. Kasan is level and fertile, abounding in corn and forests of oak. Southern Russia and Astrakhan consist chiefly of *steppes*, or immense deserts, which are divided by the Don into two regions: the high steppes lying westward are characterised by the absence of trees, and by long coarse grass and wildflowers in spring and early summer, but as the heat increases, they assume the appearance of a sunburnt waste; the low steppes to the E. are much more sterile, having a saline, sandy soil, interspersed with intensely salt lakes. The steppes are inhabited by nomadic tribes, who keep large flocks of camels. The vast region extending from the Arctic Ocean to lat. 64° is a swamp in summer, and is covered with ice for nine months in the year. The grains most generally cultivated are rye and oats, the former being the principal article of food used by the inhabitants. Rye extends to lat. 65°, barley to 67°, oats to 62°, wheat to 60°, millet to 55°, maize to 48°; while rice is cultivated only in

Transcaucasia. The northern limit of the cereals is marked by a line passing N. of lakes Enara and Imandra, and S. of the town of Mezen, meeting the Urals in lat. 60°. The extent of land under cultivation bears but a small proportion to the whole area of the country. Hemp and flax are chiefly cultivated on the upper Volga; tobacco in the Ukraine; grapes in the Crimea, Georgia, and the lower basins of the Don and Volga; potatoes extensively throughout the empire: and rice, silk, cotton, madder, melons, pomegranates, and even the sugar-cane, in Transcaucasia.

19. **Zoology.**—No accurate statistics have been furnished of the fauna any more than of the flora of Russia, notwithstanding the solid foundations for both departments of knowledge laid by the illustrious Pallas; but it is interesting to know that the isotherm of 41° Fahr. (which divides Northern from Central Europe, and which passes through Trondhjem, Christiania, and Stockholm, the islands Oesel, Kaluga, Penza, and Orenburg), has on the northern side of it 31 species of carnivora, 212 birds, 10 reptiles, and 24 cetacea. In the higher latitudes the reindeer is a source of wealth; the dreary regions of Novaia Zemlia are frequented by the great white bear, which seldom passes beyond the limits of eternal snow; the bison is found near the sources of the Narew; in the northern forests there are elks, several kinds of deer, hares, and wild hog. The wild animals that are hunted for their skins are very numerous, as bears, gluttons, badgers, wolves, foxes, martens, polecats, weasels, ermines, otters, squirrels, and marmots. In the steppes are found wolves, foxes, wild hogs, wild asses, wild horses, and other cattle, Saiga-antelopes, konsacks or foxes of the steppes, and the dipus-jerboa. The domestic animals of England are found in most parts of Russia; horses are very numerous in the central and southern provinces, as also black cattle and sheep of various species; camels and buffaloes in the steppes, and dromedaries in the Crimea. The birds are nearly the same as in the British Isles; fish is very plentiful in the rivers and Arctic Ocean, but less abundant in the Baltic. The most important fisheries are those of the Volga, Ural, and the Sea of Azov. Fish is not largely exported, but the isinglass and caviare obtained from them are sent to foreign markets. Serpents and lizards are common in the steppes; locusts, scorpions, millipedes, tarantulas, and scorpion-spiders are the most common noxious insects. Bees are found wild in the forests; and the silk-worm succeeds in the south.

20. **Ethnography.**—The entire population of European Russia, though broken up into a great number of distinct nations, belongs to two great races of the human family—the Caucasian and Mongolian. About 56,000,000 belong to the former race, and 4,270,000 to the latter. With the exception of 1,500,000 of Jews, Germans, Swedes, Greeks, Armenians, and Gypsies, the entire Caucasian population belongs to the great Sclavonian family, of which Russia is the ancient home and headquarters. The Sclavonian nations within the limits of European Russia, amounting to nine-tenths of the entire population, are Russians, Poles, Lithuanians, Letts, and

Wallachians—of which the first-named are by far the most numerous and wide-spread, occupying the central and most fertile provinces, almost to the utter exclusion of others, and also forming a certain ratio of the population in all parts of the empire. The Poles are, for the most part, confined to Poland and West Russia; the Swedes to the S. and W. coasts of Finland; the Lithuanians and Letts to the Baltic provinces S. of the Gulf of Finland; the Wallachians to Bessarabia; the Greeks and Armenians to the southern provinces; while Germans, Jews, and Gypsies are distributed over all the governments. The Mongolian race is represented in Russia by four great nations—the Finns, Samoiedes, Tatars, and Calmucks. The Finns are the most numerous, and are divided into three main branches: 1. The Western Branch, in Finland and the Baltic provinces, including Tschudes, Karelians, Esthonians, and Livonians; 2. The Eastern Branch, on the W. declivity of the Urals, in Perm and Viatka, and subdivided into Syrianes, Permians, Votiaks, and Bessermians; 3. The Volga Branch, on both sides of that river, at its confluence with the Kama, and including Tchermians, Mordvins, and Tchouwaches. The Samoiedes and Lapps are few in number, and confined to the government of Arkhangel. The Tatars, or Turks, are nearly as numerous as the Finns; they inhabit chiefly the region N. of the Black Sea and the river Kuban, and comprise the Tatars proper of the central and S.E. provinces, the Kirghiz Cossacks of Astrakhan, the Bashkirs and Metcheriaks of Orenburg, Perm, Samara, Saratov, and Viatka. The Calmucks are confined to the lower basins of the Don and Volga. The following table shows the numbers belonging to each of these nations, many of the facts being taken from an ethnographic atlas of European Russia, presented by the late Emperor to Mr A. Keith Johnston, in August 1853.

I.—Caucasian Race.

Sclavonians, including		
Russians,	44,608,965	
Poles,	8,817,577	
Lithuanians and Letts,	588,993	
Wallachians,	498,409	
		54,513,944
Germans,	373,000	
Swedes,	11,470	
Greeks,	46,773	
Armenians,	37,676	
Jews,	1,060,032	
Gypsies,	46,247	
		1,575,198
Total Caucasian,		**56,089,142**

Total Caucasian—Brought forward, 56,089,142

II.—Mongolian Race.

Finns, including		
W. Branch,	918,184	
E. Branch,	314,484	
Volga Branch,	1,075,269	
Samoiedes and Lapps,	6,784	
Tatars or Tartars,	1,838,274	
Calmucks,	119,162	
		4,272,857
Total population of European Russia,		60,361,999

Languages.—For a general view of the Sclavonic languages, see under "Europe," par. 21. The principal of these are: I. The Russ or Russian, the provincial or dialectical variations of which are remarkably few, considering the vast extent of territory over which it is diffused. Indeed, it is asserted that an inhabitant of Arkhangel and one of Astrakhan, meeting at Moscow, could readily understand each other. The language exists, however, in four principal dialects: 1. *Russian proper*, which is the literary language of the whole Russian nation—it is spoken at Moscow and in all the central and northern parts of European Russia; 2. *Little* or *Malo Russian*, which contains many obsolete forms of expression, and is predominant in the southern provinces, especially towards the east; 3. *White* or *Polish Russian*, spoken by the common people in parts of Lithuania and the Ukraine; 4. *Russniak*, in Volhynia, Podolia, the east side of Galicia, and the north-east of Hungary. II. The Polish, in the provinces once forming a part of the ancient kingdom of Poland, about two-thirds of which are now within the limits of European Russia. The Lekhes, by whom the Polish language was originally spoken, were a Sclavonic race, akin to the Tchekes of Bohemia; and hence there is a close affinity between the Polish and Bohemian languages. To a foreigner, Polish appears more repulsive than any other Sclavonic tongue. This arises mainly from the disuse of the proper Sclavonic characters, and the adoption of Gothic, or, more frequently, of Latin characters to express sounds unknown in these languages. III. The Lithuanian, the dialect spoken by the peasantry in Wilna, Grodno, Minsk, and Smolensk. This truly ancient language has preserved its original features more faithfully than any other Sclavonic tongue, and approximates very closely to the Sanscrit. It has seven cases, three numbers, and three genders. IV. North of Lithuania, the Lettish or Livonian, in Courland and Livonia. In common with the Lithuanian, it is a dialect of the old Prussian language, now extinct; but the Lettish has admitted many Finnish and German elements, and has lost the simplicity of its ancient grammatical structure. V. The Wallachian or Daco-Roman, spoken in Wallachia, Moldavia, and Bessarabia, but more a Greco-Latin than a Sclavonic tongue. (See under "Turkey," and at p. 97.) For a brief notice of the

Finnish and other languages spoken by the Mongolian tribes (see under Asia, article "Ethnography," and Turkey, article 19).

Religion.—The Sclavonians, and more especially the Russians, almost all belong to the Greek Church, of which the Emperor is the head. (See p. 380.) The great majority of the Poles, however, are Roman Catholics, who exist in European Russia to the number of 7,300,000. There are only 3,500,000 Protestants in the empire. These comprise the Finns, in Finland, who are nearly all Lutherans, though the other Finnish tribes either remain in heathenism, or have embraced the faith of the Greek Church. Many of the Letts are Moravians; and a considerable portion of the population of the Baltic provinces belong to the Reformed Church. The Tatars and Bashkirs, together with most of the Circassians, are Mohammedans; the Calmucks are idolaters of the Buddhist type; and many of the Samoiedes and Lapps are Shamans or Fetishists.

Education.—Russia is the worst educated country in Europe. In 1824, only 1 in 300 of the population was attending school; but in 1854, the ratio had risen to 1 in 151; while in Germany the proportion is 1 in 6 in some states, and 1 in 9 in others. Religious instruction constitutes the basis of all school-training, and all teachers are placed under the surveillance of ecclesiastical inspectors. The superior establishments comprise 6 universities, besides the Pedagogical Institute of St Petersburg, 3 lyceums, and 27 military schools, which are under the immediate direction of the Emperor, and dispersed over the different provinces of the empire. The public establishments for the pursuit of science are numerous, and liberally endowed by the government. Amongst these, the Academy of Sciences at St Petersburg enjoys the first rank. The 6 universities, with the dates of their foundation, are as follows:—Dorpat, 1632; Moscow, 1759; Kharkov, 1803; Kasan, 1804; St Petersburg, 1819; Kiev, 1833. The University of Wilna was suppressed in 1832, and that of Warsaw in 1834.

The **Literature** of Russia is extremely meagre, and confined within narrow limits. The only branches of science that have been cultivated with success are—their own national history; topographical descriptions of foreign countries (chiefly Asiatic); and philological investigations relative to the Sclavic languages, in which they have displayed great ingenuity and perseverance. Philosophy, and the different branches of natural science, have been much neglected. Classical learning, moreover, finds favour only with a few; but poetry, fable, and works of fiction have been much cultivated, and the Russian is rich in elegant translations from the classical and modern languages. In 1822, no fewer than 350 living writers were enumerated, most of them belonging to the nobility, and only one-eighth part to the clergy. The following are a few of the most distinguished names in Russian literature:—

HISTORY.—The venerable Nestor, born 1056, laid, by his "Annals," the basis of all Sclavic history. Michael Lomonosof, born 1711, is regarded as the father of Russian literature. Nicholas Karamsin, author of the "History of the Russian Empire," extending to the reign of the House of Romanóff, A.D. 1613. This great work has been twice translated into German, and twice into French. Among the most celebrated of later historians may be mentioned Ustraïlov, the author of a "Life of Peter the Great," published a short time ago, and now attracting great attention.

POETRY.—Gabriel Dershayin, born 1743, celebrated for his inimitable "Ode to Deity," which has been translated into many European and Asiatic tongues. The Chinese Emperor has it printed in letters of gold, on white satin, and hung up in his palace. Alexander Pushkin, usually considered the greatest poet Russia has produced (born 1799). Other celebrated names are—Dmitrieff, Ozeroff, Von Wisin, Chemnitzer, Kapnist, Shukofsky, Kosloff, Baron Rosen.

PHILOLOGY.—Alexander Vostakoff, the first Sclavic scholar in Europe; Kowalovski, distinguished for his knowledge of the Mongolian languages; Bichoorin, the best Chinese scholar in Russia; Senkowski, the celebrated Orientalist; Schaffarik, author of the famous "History of the Sclavic Language and Literature;" Merslakoff, the first literary critic in Russia; Dobrovsky, a Hungarian, author of "Grammar of the Sclavonic Languages;" and the celebrated Pallas, a German by birth, who was not only a distinguished naturalist, and historian of the Mongolian nations, but also a laborious and indefatigable philologist. By command of the Empress Catharine, he undertook a comparative vocabulary of all the languages of the world, two volumes of which were published at St Petersburg in 1789; they contain 286 words, in 200 languages of Asia and Europe. A third volume, which never appeared, was intended to embrace the languages of Africa and America.

THEOLOGICAL LITERATURE.—Theophon Prokovitch, usually styled the Russian Chrysostom, died 1756; Platon Levshin, the most productive of the ecclesiastical writers; Anastasius Bratonofski takes the first place among Russian pulpit orators. Other celebrated names in this department are—Demetrius, Stephen Javorsky, and Ivan Levanda.

PROSE WRITERS AND NOVELISTS.—Zagoskin, Gretsch, Bestucheff, Muranieff, Batuschkoff, Sagoschkin, Odojewsky, Bulgarin.

POLITICS AND STATISTICS.—M. L. de Tegoborski, author of "Commentaries on the Productive Forces of Russia," 1856.

PHYSICAL SCIENCE.—Tenner, Struve.*

21. **Form of Government, Army and Navy, &c.**—The government is an absolute, hereditary monarchy; all power, both in Church and State, emanates from the Emperor, and to his decision all matters of importance must be submitted. He cannot, however, safely disregard the laws, nor the opinions and wishes of the nobility, who have greater political influence in Russia than in any other European country. Nearly all the land of the country, together with the peasantry occupying it (who are called *serfs*, and are bought and sold with the land), is in their possession,† and they alone can pos-

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* One of the most important scientific undertakings of modern times, in connection with geography and astronomy, is the measurement of an arc of the meridian, between the mouth of the Danube and the North Cape, begun in 1816, and completed in 1855. The measurement was conducted under the direction of Lieutenant-General Ténner, of Russia; Selander, Director of the Royal Observatory of Stockholm; Hansteen, Director of the Royal Department of Geography of Norway; and Struve, Director of the Central-Nicholas Observatory of Russia. [illegible]

pr[illegible] expected that many more will follow their example. In 1851 the number of serfs in European Russia was 22,000,000.

sess real estate and own serfs. They alone can hold offices, civil and military, which gives to them the general administration and government of the empire; and they alone can enter the universities. Vast, however, as these privileges are, the Russian noble enjoys no real liberty, and he is more at the mercy of the Czar than the meanest serf on his estate is at his. Whatever laws are enacted, the Czar is above them; he is the living law, and observes the written one only so far as he feels inclined. There are three great boards of administration—viz., the Imperial Council, the Directing Senate, and the Holy Synod. The first, which has no limit as to its numbers, is divided into four departments, those of legislation, war, civil and religious affairs, and finance.

Army and Navy.—The military force is very great—probably the greatest in the world. In 1853, and before the war with Britain, France, and Turkey thinned its numbers, the army was 800,000 strong, of whom about 100,000 perished during the contest. In 1858, the regular army amounted to 577,859 men; besides a large irregular force of light cavalry, consisting for the most part of Calmucks and Cossacks. The regular army consists of eight grand divisions—viz. the Guards, the Army of the South, the Army of the West, the Army of Lithuania and Poland, the Corps of the Caucasus, the Finland Corps, the regiments of the military colonies, and the army of reserve. The Navy, in 1854, consisted of 58 ships of war, of all classes, and from 400 to 500 gunboats. These were manned by 50,000 men, and carried 9000 guns. This force was divided into two principal fleets—the Baltic Fleet and the Black Sea Fleet. A great number of the ships composing the Black Sea fleet were sunk by the Russians in the harbour of Sebastopol, in 1854, to prevent the Anglo-French fleet from entering. The Baltic fleet, in like manner, protected itself behind the fortifications of Cronstadt. In 1856 the fleet comprised 46 vessels of all sizes, carrying 1896 guns, besides a large and increasing number of steam gunboats and gunboats propelled by oars. The army is maintained at a comparatively small expense, and both army and navy do not cost more than £15,000,000 annually.

The *Public Debt*, which in 1853 amounted to £63,537,000, had in 1857 increased to £105,000,000. In 1852 the revenue of the empire amounted to £45,900,000, and the expenditure to £45,940,000.

22. **Commerce and Manufactures.**—The commerce of Russia is chiefly internal. No country in the world can so well dispense with a foreign commerce. The empire is a world to itself, and wants almost nothing with which the wider world can supply it. It is the only country that produces train-oil in abundance on one of its coasts, and olive-oil, in scarce less abundance, on another,—that can exchange its native seal-skins and ermine furs for its native silk and cotton,—that makes gin from its barley and rye, brandy from its wine-lees, and rum from its sugar,—that barters its cranberries, gathered on the wastes of Siberia, for its pomegranates reared in the Transcaucasian provinces,—and that, while it mixes up its barley-bread, in one of its districts, with the inner bark of the fir, makes its cakes of unimported rice in another. Its commerce is greatly facilitated by its innumerable navigable rivers, and its vast and excellent system of canals, by means of which its four seas are connected together in many directions, and a complete system of inland navigation established, the centre of which is Moscow. A

great portion of the internal trade is transacted at annual fairs, the most remarkable of which is that of Nijni-Novgorod. The chief seaports are—St Petersburg and Riga on the Baltic, Odessa on the Black Sea, Astrakhan on the Caspian, and Arkhangel on the White Sea.

The chief *Manufactures* are woollens, silks, linens, cottons, metal wares, soap, candles, glass, paper, porcelain, arms, jewellery, and morocco leather. Most of the articles used by the peasantry are made in the villages, each of which is usually devoted to a single branch of industry. Manufactures have made great progress since the time of Peter the Great, both in number and efficiency. In 1839 there were 6855 factories, giving employment to nearly half a million workmen, and they are rapidly increasing.

The *Exports*, in 1856, were valued at £27,000,000 sterling, and the *Imports* at £20,500,000. The chief exports are corn, tallow, hides, hemp, flax, linseed, building-timber, tar, pitch, potash, russia leather, furs, wool, oil, wax, honey, copper, iron, platina, cordage, and sail-cloth. Great Britain is Russia's best customer, taking three-fourths of her flax and hemp, three-fourths of her tallow, three-fifths of her oleaginous grains, two-fifths of her exported corn, &c. The total value of her trade with Britain, in 1853, was £15,640,000; with Prussia, £5,000,000; with France, less than £4,000,000; and with Turkey, £2,000,000. The mercantile marine is small, embracing only 2522 vessels, besides a few steamers; and the foreign trade is principally conducted by other nations. In 1856, there arrived in Russian ports 10,976 vessels; cleared, 10,470. The principal imports are articles of colonial produce, together with raw cotton, manufactured goods, salt, wine, indigo, cochineal, and madder. Tea is imported by the overland caravan route from China, and many other articles come in the same way.

23. **Inland Communication.**—The *Roads* are in general wretched, with the exception of that from the capital to Moscow, which is said to be the finest in the world. It is macadamised throughout, and lined with trees; and at the end of every five miles there is a station for a corporal and a party of soldiers, whose duty it is to keep it in repair. The condition of the roads is of less importance in Russia, as they are covered with ice and snow for many months in the year, when sledge-travelling is universal.

The *Canals* are very numerous, and of the highest importance (see under "Commerce"). Among the principal may be mentioned:—1. The *Canal of Vishneĭ Volotchok*, connecting the Twertza, an *affl.* of the Volga, with the Msta, an *affl.* of the Volkhov, which enters Lake Ladoga—thus uniting the Baltic with the Caspian, which, by this route, is 3200 miles distant, and yet the canal is only 3 miles long. It is free from ice from the middle of April to the end of October, and is frequented by about 12,000 vessels annually. Another canal, joining the Neva with the Volga, is the *Canal of Tikhvin*, which connects the Tikhvina and Sias with the Mologa, an *affl.* of the Volga. 2. The *Canal of Kubinsk*, uniting the Tcheksna, an *affl.* of the Volga, with the Sukhona, an *affl.* of the Dwina—or the Caspian with the White Sea. 3. The *Maria Canal*, uniting a small river flowing into Lake Bielo with another flowing into Lake Onega—thus connecting (by the aid of No. 2) the Baltic, Caspian, and White Seas. 4. The *Canal of Lepel* or *Berezina*, unites the Düna and Dnieper, or the Baltic with the Black Sea. 5. The *Royal Canal*, in Poland, unites the Pripet, an *affl.* of the Dnieper, with the Bug, a tributary of the Vistula. 6. The *Ivanov Canal,* in Tula, connects the Upa, an *affl.* of the Oka, with the Don—or the Caspian with the Black Sea. 7. The *Northern Canal* unites the head-waters of the Kama with the Vichegda, the principal *affl.* of the Dwina. 8. The *Ladoga Canal,* and the *Sias* and *Svir Canals,* form a navigable chain around the south and south-east sides of Lake Ladoga. This is the most frequented of all the Russian canals: it is said that 25,000 vessels pass through its principal sluice annually.

Railway communication is very limited, considering the extent of the empire. In 1858, 715 miles were completed; but soon there will be thrice that number. The principal railways already executed are:—The great line from St Petersburg to Moscow, 400 miles; the line from Warsaw, by Czentochow and Cracow, and then joining the Prussian and Austrian lines at Kosel, in Silesia; and the line from St Petersburg to Warsaw, of which only 200 miles are yet completed. The projected lines are:—That from Moscow to Kaffa, 900 miles, with a branch to Odessa; the line from Moscow to Nijni-Novgorod, 293 miles; and the line from Kursk to the port of Libau, in Courland, crossing the line from the capital to Warsaw at Dünaburg, in Vitebsk.

NORWAY AND SWEDEN.

THE kingdoms of Norway and Sweden, now united under one sovereign, occupy between them the entire north-western peninsula of Europe, usually called Scandinavia.

1. **Position and Boundaries.**—N., the Arctic Ocean; W., the Atlantic, North Sea, and the Cattegat; S., the Skager Rack and the Baltic; and E., the Baltic, Gulf of Bothnia, and Finland. It extends from 55° 22′ to 71° 12′ N. lat., and from 4° 50′ to 31° 15′ E. lon., thus embracing nearly 16° of lat. and 26° of lon. The parallel and meridian which pass through the centre of the peninsula intersect each other near the mouth of the river Angermann, on the E. coast of Sweden; but Christiania, the capital of Norway, is in the same latitude as Cape Farewell in Greenland, Lerwick, Upsala, and St Petersburg, and nearly on the same meridian as Kiel, Hamburg, Gotha, Lucca, Elba, and Tunis. Stockholm, the capital of Sweden (lat. 59° 20′, lon. 18° 3′), is nearly in the same latitude as Kirkwall, Revel, Vologda, and Tobolsk, and in nearly the same longitude as Danzig, Buda, Mostar, Otranto, and Cape Town.

2. **Form and Dimensions.**—Scandinavia is the largest peninsula in Europe, and, in common with nearly all the others, stretches out in a general southerly direction: extreme length, from the north of Finmark to the south of Sweden, 1190 miles; extreme breadth, from Bergen to Stockholm, 490 miles; smallest breadth, from Trondhjem to Hernösand, 230 miles; breadth of the isthmus con-

necting it with the Continent, 300 miles. Norway is 1150 miles long, by 260 miles broad; and Sweden is 970 miles long, by 245 miles broad.

3. **The Coast Line** is difficult to estimate, on account of the vast number of *fiords* or gulfs which penetrate deeply into the interior; but it is usually given as about 3000 miles, of which 1600 belong to Norway and 1400 to Sweden, or one mile of seaboard to every 97 square miles.

4. **Area**, 291,903 square miles, or 3½ times the size of Great Britain: the area of Norway is 121,807 square miles, being a little less than that of the British Isles; while that of Sweden is 170,096 square miles, or one half larger.

5. **Population.**—In 1855 the population of Norway was 1,433,488; and of Sweden, 3,641,600, being upwards of five millions for the entire peninsula. Scandinavia is the most thinly-peopled country in Europe, having only seventeen persons to each square mile. The population of Norway scarcely exceeds that of the West Riding of Yorkshire; it is less than the half of the population of Scotland, and gives only ten persons to the square mile; while the population of Sweden is one-fourth larger than that of Scotland, giving twenty inhabitants to the mile.

6. **Political Divisions.**—NORWAY is divided into six Stifts or provinces, which are subdivided into seventeen Amts or bailiwicks.

Finmarken.*—HAMMERFEST (Whale Island), Altengard 2 (Alten), Tromsöe 1 (west coast).

Nordland.—ALSTAHOUG (Island Alsten).

Trondhjem or **Drontheim.**—TRONDHJEM 16 (Trondhjem Fiord), Christiansund 3, n. (Sundal), Molde 1 (Romsdal Fiord), Roraas 4 (Glommen).

Bergen.—BERGEN 26 (Kors Fiord), Rosendal (Hardanger Fiord).

Christiansand.—CHRISTIANSAND 10 (Torrisdals), Stavanger 12 (Bukke Fiord), Mandal 3, Arendal 2 (Skager Rack).

Agershuus.—CHRISTIANIA 39, Frederickshald 7, Frederickstadt 3, Tonsberg 2, Moss 3 (Christiania Fiord), Laurvig 3, Kongsberg 4 (Lauven), Drammen 10 (Drammen), Porsgrund 2, Skeen 2 (Skeens Elf), Kongsvinger (Glommen), Lillehammer (Lake Miösen).

SWEDEN was formerly divided into three provinces, viz.—Gothland, capital Gothenborg; Svealand, capital Stockholm; and Norrland, capital Hernösand. These have recently been subdivided into twenty-four *læns* or districts, as follow:—

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* The pronunciation of Norwegian names differs considerably from that of the Danish, though in all other respects the two languages are nearly identical The following are the chief peculiarities of the Norwegian:—

e final has its own distinct sound, and not the shut sound of *i*, as in Danish, as Moldo (*Mol'deh*).

o at the end of a syllable=*oo* in food, as Odense (*Oo'den-sce*)

aa=*o* in not, as Roraas (*Roo'ros*).

öe make two syllables, as in Tromsöe (*Trom'sō-e*)

uu=*oo* in food, as Agershuus (*Ag'ers-hoos*).

d=English *d*, and not like *th*, as in Danish.

g final always hard, never=*ch*, as in Danish.

GOTHLAND, TWELVE LÆNS.

Gothenborg.*—GOTHENBURG 29 (Göta), Uddevalla 4 (Cattegat).

Wenersborg or **Elfsborg.**—WENERSBORG 3 (Lake Wener), Alingsäs 2, n. (Göta).

Halmstad.—HALMSTAD 2 (Nissa).

Malmöe.—MALMÖE 10, Helsingborg 3, Landscrona 4, Lund 5 n. (The Sound), Ystad 4 (south coast).

Christianstad.—CHRISTIANSTAD 5 (Helge).

Carlscrona.—CARLSCRONA 12, Carlshamn 4 (south coast).

Wexiö.—WEXIÖ 2 (Lake Sodre).

Jönköping.—JÖNKÖPING 5 (Lake Wetter).

Mariestad.—MARIESTAD 3 (Lake Wener).

Linköping.—LINKÖPING 5, Norrköping 11 (Motala).

Kalmar.—KALMAR 6, Westervik 3 (Kalmar Sound), Borgholm (Island Oeland).

Wisby.—WISBY 4 (west coast of Island Gothland).

SVEALAND, OR SWEDEN PROPER, SEVEN LÆNS.

Stockholm.—STOCKHOLM 100 (Lake Mælar).

Nyköping.—NYKÖPING 3 (east coast), Eskilstuna 3, n. (Lake Hielmar).

Örebro.—ÖREBRO 4 (Lake Hielmar).

Carlstad.—CARLSTAD 3, Christineham 2 (Lake Wener), Philipstad 1, n. (Lake Dagloe).

Fahlun or **Stora Kopparberg.**—FAHLUN 5 n., Hedmora 1 (Dal), Wolderäs (West Dal).

Westerås.—WESTERÄS 3, Köping 1 (Lake Mælar), Arboga 2 (Arboga), Sala 3 (Sala).

Upsala.—UPSALA 5, Dannemora (Sala), Enköping 1 (Lake Mælar).

NORRLAND, FIVE LÆNS.

Gefleborg.—GEFLE 8, Söderhamn 2, Huddiksvall 2 (east coast).

Östersund.—ÖSTERSUND 2 n. (Indals).

Hernösand.—HERNÖSAND 2 (Angermann), Sundsvall 2, n. (Indals).

Umea.—UMEA 1 (Umea), Asele (Angermann).

Pitea.—PITEA 1 (Pitea), Lulea 1 (Lulea).

7. **Descriptive Notes.**—The Scandinavian peninsula is singularly destitute of towns. In the foregoing tables we have enumerated

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* In Swedish the vowels *a*, *e*, *i*, *ä*, and *ö* have the same sounds as in German; as Carlstad, Wener, Indals, Mälar, Jönköping.

å=*o* in stone, as Åbo, Luleå (*O'boo*, *Lu'le-o*).
o at the end of a syllable=*oo* in food, as Orebro (*Or'e-broo*).
u=*oo* in food, as Umea (*Oo'me-o*).
y=German *ü*, as Nyköping (*Nü'chö-ping*).
g and *j* before a vowel=*y* in you, as Gefle, Jönköping (*Yev'leh*, *Yön'chö-ping*).
ki or *kj*=*ch* in church, as Linkiöping, Linkjöping, or Linköping (*Lin'chö-ping*).

seventy-three, only nineteen of which contain more than 5000 inhabitants; there are only ten above 10,000; three above 20,000; and one above 100,000.

Of the twenty-six towns of NORWAY, only seven exceed 5000 inhabitants; six exceed 10,000; and only one (the capital) has more than 20,000.

Hammerfest, capital of Finmarken, is the most northern town in Europe, being situated in lat. 70° 40′, and at the extreme limit of the growth of cereals: it is little more than a fishing village, built of wood, but exports large quantities of stockfish, whale, seal, and shark oil, walrus hides and teeth, copper, and feathers. In summer the sun remains two months above the horizon, rendering the heat oppressive; and even in winter the temperature is such as to allow the fishing to be carried on. *Altengard* is sometimes regarded as the capital of Finmarken: two distinct lines of upraised ancient sea-beach, one above the other, are found here, indicating that in the course of ages the land has risen many feet. *Alstahoug,* a mere village, on the island Alsten, is the seat of the Bishop of Nordland and Finmarken. *Trondhjem* or *Drontheim,* formerly the capital of the old Norwegian kings, is a walled town defended by a fortress; it maintains an active trade in deals, dried fish, tar, and copper from the mines of Roraas. *Roraas,* near the source of the Glommen, is celebrated for its extensive copper-mines. The town stands at an elevation of 7000 feet above the level of the sea, and the climate is nearly a perpetual winter. *Bergen,* a fortified city and seaport, is a station for a naval squadron. It is an important fishing-station: many small vessels arrive here in summer from the northern provinces, carrying fish, oil, skins, and feathers, and returning with imported goods. *Christiansard,* a fortified seaport town, has a good harbour, where shipbuilding is carried on: it has also a considerable export trade. *Stavanger* is one of the oldest towns in Norway: it has one of the finest Gothic cathedrals in the country and a good harbour, with an export trade in timber, herrings, lobsters, tusk, and oak bark. *Mandal,* the southernmost town in Norway, used as a harbour of refuge. CHRISTIANIA, capital of the kingdom of Norway, stands at the head of the long and narrow fiord of same name. It has no architectural beauty: the streets are, however, straight, broad, and well paved, and the environs are exceedingly picturesque. It contains a royal palace, the arsenal of the kingdom, a university, a botanic garden, an astronomical observatory, with various other educational and scientific establishments. There are manufactures of woollen fabrics, hardware, and paper; distilleries and breweries, and a trade in deals and fish. *Frederickshald,* a fortified town, famous for its strong fortress, called Fredericksteen, in besieging which Charles XII. of Sweden was killed in 1718: has trade in timber and iron. *Frederickstadt,* a fortified town, has an arsenal, tobacco factory, and a good harbour. *Moss,* a seaport town, with extensive iron-mines in the vicinity. *Laurvig* has a cannon-foundry, snuff factories, and distilleries. *Kongsberg* has in its vicinity the most important silver-mine in the kingdom: it contains a school of mines, and a manufactory of arms and powder. *Drammen* contains a college, various schools, several manufactures, and an active trade in timber, iron, and pitch.

Of the forty-seven towns of SWEDEN above enumerated, there are only twelve of above 5000 inhabitants; four above 10,000; two above 20,000; and one (the capital) reaches 100,000.

Gothenburg (Swed. *Göteborg*), the second city in Sweden as respects commerce and population. It is elegantly built, with wide streets, traversed by canals, which give it the appearance of a Dutch town. The harbour is defended by three forts: there are shipbuilding docks, numerous manufactures, and a large export trade, particularly in herrings, iron, steel, copper, and timber: it was founded by Gustavus Adolphus, in 1610. *Halmstad*, celebrated in Swedish history as the place where the Swedish, Danish, and Norwegian commissioners, under the Kalmar union, met to choose their king. *Malmöe*, a strongly fortified town on the Sound, with steam communication with Copenhagen and Lubeck; manufactures of woollen cloths, carpets, tobacco, and soap. *Landscrona*, a fortified town on the Sound, with a good harbour, and manufactures of leather and tobacco. *Lund*, a very ancient town, which in Pagan times is said to have had a population of 80,000: in the Middle Ages the kings of Scania were elected here. *Christianstad* has manufactures of gloves, linens, and woollen fabrics. *Carlscrona* ("Charles's crown"), a fortified seaport, which, as a naval station, is not surpassed by any in Europe; a large export trade in metals, potash, and other Baltic produce. *Jönköping*, at the southern extremity of Lake Wetter, has an arsenal and some manufactures: in the vicinity are the mineral springs of Lindal and Maredal. *Linköping* is one of the oldest towns in Sweden, and possesses considerable historical interest; in its vicinity was fought the battle of Stangebro, in 1596, when Sigismund was defeated by his uncle Charles IX. *Norrköping*, an important town at the mouth of the Motala, famous for its fine broadcloth: here is a building-yard, a salmon-fishery, manufactures of brass, hardwares, linen, cotton, and several other articles. *Kalmar:* here was signed, in 1397, the treaty of Kalmar, which united the kingdoms of Denmark, Norway, and Sweden. *Wisby* is one of the oldest towns in northern Europe, and was once a leading member of the Hanseatic League: its walls and towers are almost as entire as in the thirteenth century: it is the birthplace of Polhem, the mechanician, in 1661.

STOCKHOLM, the capital of Sweden, stands on a number of islands at the junction of Lake Mælar with the Baltic. The city has not a very imposing appearance; the houses are chiefly of brick or painted wood; the streets are unpaved, narrow, crooked, and dirty; but some of the public buildings are very fine, especially the palace. It is also the seat of a famous academy of sciences, a zoological museum, a botanic garden, a college of medicine, a school of navigation, academies of painting, sculpture, and literature; societies of agriculture, commerce, and philosophy; a cannon foundry, steam-engine factory, and numerous manufactures: it is the chief commercial emporium of Scandinavia, and communicates by canals with a large part of the interior: it was founded in the thirteenth century, but did not supersede Upsala, as the Swedish capital, until the seventeenth. *Örebro* was the first Swedish town in which the Reformation was formally established: it has a considerable printing establishment; its principal church contains a monument to Engelhardt, the celebrated German jurist; and the mineral springs of Adolfsberg are in the vicinity. *Carlstad* exports copper, iron, corn, salt, and timber. *Philipstad* is wholly surrounded by iron-mines, one of which is in a mountain consisting almost entirely of iron ore: some of the excavations are of astonishing magnitude. *Fahlun*, an important mining town; the great copper-mine here has been wrought for upwards of 1000 years. *Westerås* contains the most ancient college in Sweden and extensive shipbuilding docks. *Köping:* here died Scheele, the celebrated

Swedish chemist, in 1786. *Sala*, surrounded by silver-mines and the celebrated mineral springs of Sätra. *Upsala*, once the capital of Sweden, and the residence of her kings, contains a celebrated university, founded in 1478, which has 47 professors, 850 students, and a library of 100,000 volumes, rich in rare books and MSS., particularly the *Codex Argenteus*, a copy of the Gospels in Gothic, as translated by Bishop Ulfilas in the fourth century: among its more celebrated professors were Linnæus, Celsius, Bergmann, Scheele, and Berzelius; and in the vicinity is an ancient temple of Odin, in which numerous antiquities have been found. *Dannemora:* its mines are the largest, and yield the best iron in the world; much of it is sent to England, where it is manufactured into the finest steel. These mines have been wrought for three centuries. *Gefle*, one of the principal towns in Sweden in regard to commerce and shipping. *Umea*, mostly built of wood, and twice destroyed by the Russians, has a mineral spring and considerable trade in timber and iron. *Lulea*, now the most northern town in Sweden, since Tornea was ceded to the Russians.

8. **Capes.**—Cape Nordkyn, the most northern point on the mainland of Europe, lat. 71° 5′; North Cape, the extreme northern point of Scandinavia, on the island Mageröe;* Cape Stadt, S.W. of Trondhjem, nearly the most westerly point of Scandinavia; Cape Lindesnaes, or the Naze, the most southern point of Norway.

9. **Islands.**—These are very numerous, particularly on the west of Norway; they are principally the following:—Mageröe and Soröe groups, fringing the coast of Finmark; the Tromsöe group, N. of Nordland; Loffoden Isles,† W. of Nordland; Vigten Islands,‡ N. of Trondhjem; Troyen, Hitteren, and Smölen, W. of Trondhjem; Sulea and Bommelöe Islands, W. of Bergen; Karmöe Island, W. of Christiansand; Oeland and Gothland, S.E. of Sweden.

10. **Gulfs, Bays, and Straits.**—Varanger Fiord, N.E. of Finmarken; West Fiord, between Nordland and the Loffoden Isles; Trondhjem Fiord and Romsdal Fiord, W. of Trondhjem; Sogne Fiord and Hardanger Fiord, W. of Bergen; Bukke Fiord, W. of Christiansand; the Skager Rack and the Sound, between Norway and Denmark; the Kattegat, between Sweden and Denmark; Gulf of Bothnia, between Sweden and Finland; Kalmar Sound, between Sweden and the island Oeland.

11. **Mountains, Glaciers, and Waterfalls.**—An immense mountain-range traverses the entire peninsula, in the direction of its greatest length, from the Naze to the North Cape, a distance of 1150 miles. It is usually subdivided into three portions, viz.:—

The *Hardanger Field*, between Christiansand and Bergen, separating the basins of the Lauven and Drammen from the Atlantic; highest summit, and the culminating point of the whole system, Skageslöestinden, 8670 feet. The *Dovrefield*, between Agershuus and Trondhjem, and dividing the basin of the Glommen from the Atlantic; highest summit,

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* The line of perpetual congelation is here only 1100 feet above the sea.

† Generally uninhabited, but important as stations for fishing, and for collecting the down of the eider-ducks, which frequent these isles in myriads.

‡ The Vigten Islands are historically important as the native country of Rollo, the conqueror of Normandy and the ancestor of William the Conqueror.

Sneehätten, 7620 feet. The *Kiolen Range*, between Trondhjem and Sweden, and separating the waters which fall into the Atlantic from those finding their way to the Gulf of Bothnia; highest summit, Sulitelma, 6200 feet. For additional particulars see under "Europe," Scandinavian System.

GLACIERS.—The glaciers of Scandinavia are numerous, though less known than those of Switzerland. They are found in three principal groups—viz., a southern, central, and northern group. The farthest south contains the Folgefond glacier, S.E. of Bergen (lat. 60°), which is the first glacier met with travelling northward; and the Nygaard and Lodal glaciers, near Skageslöestinden, which in summer discharge 5,000,000 cubic fathoms of snow per day into the river Justedal. The second group is in the Kiolen Mountains: it includes Sulitelma (lat. 67°), and is usually called the Fondal group. The last group, called Jokulsfiord, is in the neighbourhood of Altengard, and is remarkable as descending to the level of the sea, into which it projects some of its members a considerable distance.

The WATERFALLS of Scandinavia have long been celebrated. The most remarkable is the Trolhætta Fall, on the Göta. The river descends 112 feet, in several successive leaps, presenting a spectacle extremely grand, the quantity of water being greater than in any other waterfall in Europe. The principal waterfalls in Norway are the Sarpen, on the Glommen, near Frederickstadt, 60 feet high; the Rukan, or Riukan Fall, formed by the Maane-Elf, which issues from the mountain-lake of Miöswasser, in the Upper Tellemark, and descends perpendicularly 800 feet; and the Borring Fall, in Bergen, which descends from a height of 900 feet.

12. **Principal River-Basins.**—These are all small, owing to the peculiar configuration of the country, and its being traversed by mountains and elevated table-lands through its entire length: there are no reliable data for estimating the area of any of them.

BASINS.	Length in English Miles.	CAPITALS.
Glommen,	280	CHRISTIANIA.
Göta and Clara,	300	Gothenburg, Wenersborg, Mariestadt, Carlstadt.
Motala,	100	Nyköping, Linköping, Jönköping.
Mælar,	120	STOCKHOLM, Westerås, Upsala, Örebro.
Dal,	250	Gefle, Fahlun.
Indals,	90	Östersund.
Angermann,	120	Hernösand.
Umea,	180	Umea.
Pitea,	180	Pitea.

13. **Lakes.**—The lakes of Scandinavia are extremely numerous. In Norway alone there are said to be 30,000; but they are nearly all of very limited extent. Many are situated at great elevations in the table-land, as Bygdinsee, 3490 feet above the sea-level. Nearly one-eighth of the surface of Sweden is covered with lakes, some of

which are of great magnitude—as Wener (area 2120 square miles), Wetter, and Mælar.

Basin.	*Lakes.*
Glommen,	Oieren, Miösen.
Gotha,	Wener, Foemund.
Motala,	Wetter, Roxen, Somma.
Mælar,	Mælar, Hielmar.
Dal,	Siljan, Runn.
Indals,	Storjön.
Umea,	Stor-Uman.
Skeleftea,	Stor-Avan.
Lulea,	Stor-Lulea.
Tornea,	Tornea.

14. **Table of Rivers and Towns.**—The 73 towns above enumerated stand on 45 rivers or fiords, 23 of which enter the sea directly, the remainder being either tributaries or arms of the sea.

Basins inclined to the Atlantic.

Rivers.	*Towns.*
Tana,	The boundary between Finland and Russia.
Alten,	HAMMERFEST, *Altengard.*
Wessen (L. Rys),	ALSTAHOUG.
Trondhjem Fiord,	TRONDHJEM or DRONTHEIM.
Sundal,	*Christiansund.*
Romsdal Fiord,	*Molde.*
Kors Fiord,	BERGEN.
Bukke Fiord,	*Stavanger.*
Mandals,	Mandal.

Basins inclined to the Skager Rack.

Rivers.	*Towns.*
Torrisdals,	CHRISTIANSAND.
Nid,	*Arendal.*
Skeens Elf,	*Porsgrund, Skeen.*
Lauven,	*Laurvig, Kongsberg.*
G. of Christiania,	*Frederickshald, Frederickstadt, Tonsberg, Moss, Drobak,* CHRISTIANIA.
Drammen (L. Tyri Fiord),	Drammen.
Glommen (L. Oieren), *l*	*Frederickstadt, Kongsvinger, Roraas.*
Logan (L. Miösen),	*Lillehammer.*

Basins inclined to the Kattegat.

Rivers.	*Towns.*
Coast of Gothenburg,	*Uddevalla.*
Gotha (L. Wener),	GOTHENBURG, *Alingsås,* n., WENERSBORG, MARIESTAD, *Christineham,* CARLSTAD.
Clara (L. Fœmund),	CARLSTAD, *Philipstad,* n.
Coast of Halmstad,	*Warberg, Falkenberg.*
Nissa,	HALMSTAD.
The Sound,	*Helsingborg, Landscrona, Lund,* MALMÖE.

Basins inclined to the Baltic.

Rivers.	*Towns.*
Coast of Malmöe,	*Ystad.*
Helgo,	CHRISTIANSTAD.
Coast of Carlscrona,	*Carlshamn,* CARLSCRONA.
Kalmar Sound,	*Christianopel,* KALMAR, *Westervik, Borgholm,* n.
Motala (L. Wetter),	LINKÖPING, Norrköping, *Wadstena,* JÖNKÖPING.
Coast of Nyköping,	NYKÖPING.
L. Maelar and R. Arboga,	STOCKHOLM, *Södertelge,* WESTERÄS, *Arboga, Köping,* ENKÖPING.
Sala, *l*	*Sigtuna,* UPSALA, *Dannemora.*
Hielmar (L. Hielmar),	ÖREBRO, *Eskilstuna.*
Dal (L. Siljan),	GEFLE, n., *Sala,* n., *Avestad, Hedmora, Elfvedal.*
Fahlun (L. Runn), *l*	FAHLUN.
Westerdal,	*Wolderäs.*
Luisne,	*Söderhamn.*
Coast of Gefleborg,	*Huddiksvall.*
Indals (L. Storjön),	*Sundsvall,* ÖSTERSUND.
Angermann,	HERNÖSAND, *Asele.*
Umea (L. Stor-Uman),	UMEA.
Vandal, *l*	*Tornberg.*
Skeleftea (L. Stor-Avan),	No towns.
Pitea,	PITEA.
Lulea (L. Stor-Lulea),	*Lulea.*
Tornea (L. Tornea),	*Tornea,* ceded to Russia in 1810.

15. **Climate.**—Owing to its being nearly surrounded by the sea, Scandinavia enjoys comparatively a very mild climate. On the western side of the great mountain-chain it is milder than on the eastern side, and greatly more humid. The snow-line is much higher than in corresponding latitudes of other countries, and the cereals extend much farther N. In Siberia the cultivation of grain ceases at lat. 60°, while in Norway it extends to lat. 70°. Even at the North Cape the sea never freezes; but the shallow and comparatively fresh water of the Baltic and Skager Rack are generally covered with ice, in winter, near the coasts. In the interior of Sweden the summers are very hot, and the winters extremely cold. Here mercury often freezes north of lat. 61°, and snow covers the ground for nearly six months in the year. Spring is almost unknown, and from eight to twelve weeks usually suffice for sowing, ripening, and reaping the crops. Owing to the length of the day and the great heat, barley may be sown and reaped at Hammerfest within the space of six weeks. The fall of rain on the west coast, where the mountains intercept the westerly winds, usually amounts to from 70 to 80 inches, but on the eastern side it is much less. (See p. 36).

16. **Geology.**—The most remarkable circumstance in the geology

of Scandinavia is the fact that the whole peninsula, N. of lat. 56° 3′, is ascertained to be gradually rising at the rate of four feet in a century; while in a small district south of this there is a corresponding subsidence. Crystalline schists, principally gneiss and mica slate, occupy five-sixths of the entire surface, and constitute the great mountain-chain. Granite is of comparatively rare occurrence, except on both sides of the West Fiord, the western side of Christiania Fiord, the district lying between Lake Wetter and the Baltic, and a tract in the basin of the river Dal. Silurian strata cover two extensive areas—one in the N. of Finmark, and the other in the centre of the peninsula, extending from the parallel of Bergen to near the arctic circle. Upper palæozoic and trap rocks occur in the upper basin of the Dal. (See pp. 84, 85).

17. **Minerals.**—The iron mines of Sweden are the most famous in the world, and yield on an average 70,000 tons annually. The best iron is found in the laen Upsala. Copper is also abundant, the mines of Fahlun alone yielding 500 tons annually. Silver is found to a small extent, and cobalt is worked in several places. The mining district of Sweden occupies an area of 16,000 square miles. Other products are—coal, of an inferior quality, lime, beautiful granite, and porphyry. The mountains of Norway are rich in minerals, but from the difficulty of transport and the scarcity of fuel, mining industry is but little developed. There are twenty-three mining establishments, but they are confined to iron, copper, silver, cobalt, and chrome. Gold, lead, alum, and graphite also occur, but in small quantities, as also magnetic iron and garnets of a beautiful green colour. The gold and silver mines of Kongsberg were formerly regarded as the richest in Europe: one mass of silver found here weighed 600 lb.

18. **Botany.**—The flora of Scandinavia is wholly embraced in Professor Schouw's *first* and *second* phyto-geographic regions, or the "region of saxifrages and mosses," and the "region of the umbelliferæ and cruciferæ." The former, also called the *Alpine Arctic flora*, includes Finmarken and the higher elevations of the mountain range which extends from the Naze to the North Cape; and the latter, the entire remainder of the peninsula. The following is a table of the flowering plants of Scandinavia (according to Fries):—

DISTRICT.	Total No. of Species.	Monocotyledons.	Dicotyledons.	No. of Genera.	No. of Families.
Lapland, ...	697	228	469	283	72
Norway, ...	1200	300	900	404	84
Sweden S. of the lakes,	1416	347	1069	...	...
Sweden N. of the lakes,	1256	312	944	...	...

Among trees the pine tribe is the most numerous, forming valuable forests in the southern provinces. Those of fir extend N. to the polar circle, and those of pine beyond it; but the birch is found as far N. as lat. 70°, and at a height of 1580 feet. A fourth part of the entire surface of Sweden is covered with forests; yet the produce of timber is small, a great part of it being required for fuel, and for charcoal required in working the mines. The principal trees are pine, fir, birch, lime, elm, alder, and willow. Fruit trees, except the cherry, are limited to the south of lat. 60°. Flowers are successfully cultivated in gardens in the south-west provinces of Norway. Among cereals, barley is the principal crop in all parts of the peninsula. In Norway it extends to lat. 70°, and in Sweden to 69°. Other kinds of grain do not thrive in Norway, except in favoured spots; but oats, rye, and even wheat, are cultivated in Sweden.

Agriculture.—The soil is not generally very fertile, and not more than one-fifth of the surface is under cultivation. In Norway, the quantity of corn raised is insufficient for home consumption, but potatoes are extensively cultivated. Owing to recent improvements in husbandry, the quantity of corn raised in Sweden fully meets the wants of the population. The horses and cattle are small, and the sheep yield an inferior kind of wool. The reindeer is the only domestic animal north of lat. 64°, where Iceland moss, which is its customary food, is very abundant. The dog is also employed in this region as a beast of draught.

19. **Zoology.**—Among *Quadrupeds*, the principal species are the brown bear, wolf, lynx, fox, glutton, lemming, deer, elk, marten, hare, sable, beaver, and squirrel. *Birds*, including the eagle and falcon, are numerous, especially on the western coasts, where sea-fowl abound. The wild-goose and eider-duck are numerous, as also the grouse and capercailzie. Wild-ducks abound in the lakes and rivers, and the swan appears in the S. in winter. The seas, lakes, and rivers, swarm with the greatest abundance of *Fish*, and fishing forms in Norway the most important branch of industry, especially the cod, herring, salmon, whale, and oyster fisheries. The rich abundance of trout and salmon renders Norway the best angling country in the world. The herring has well-nigh forsaken the eastern coast; but another species of fish resembling it, and called the strömming, is caught in great numbers. The waters of Scandinavia embrace three of Forbes's *Regions of Marine Life*—viz., the Arctic region on the N., the Boreal on the W., and the Celtic on the S. and S.E., including the Skager Rack, Kattegat, and Baltic.

20. **Ethnography.**—The people are all of the Gothic stock, with the exception of the Finns and Lapps, who belong to the Mongolian race.

Language.—The Swedes, Norwegians, and Danes originally spoke the same language—viz., the Icelandic, old Danish, or Norse; and though the Swedish and Norwegian are now dialectically different, they are still very closely allied, both in their roots and inflections; while the Norwegian is almost identical with modern Danish. The latter is the vernacular language of the peasantry in Norway, and the Danish Bible is the only one used in the churches. (See under "Europe," par. 20.)

Religion.—Scandinavia is the most Protestant country in Europe. A few Finns and Lapps still remain heathens; but almost the whole Teutonic population profess the Protestant form of Christianity. Lutheranism is the state religion, both in Norway and Sweden; but other sects are tolerated by law, except Jews, Jesuits, and monks in Norway. Recently, however, much intolerance has been manifested in Sweden towards native Protestants who refuse to attend the Established Church.

Education.—In both countries nearly all the young are in regular attendance at school; and scarcely a peasant can be found in Scandinavia who cannot read and write. There are three universities—viz., those of Christiania, Upsala, and Lund.

National Character.—The constant use of ardent spirits, to which the inhabitants of cold countries are peculiarly prone, renders drunkenness a very common vice. Sweden, in particular, may, without injustice, be regarded as the most demoralised country in Protestant Europe; but in both countries intoxication leads to a frightful amount of other delinquencies, and multitudes of offenders are annually convicted of some criminal offence. The Norwegians are generally tall and vigorous, and distinguished by the lightness of their hair. They evince a strong predilection for a seafaring life, and make excellent sailors. The Swedes are characterised by a tall, robust stature, light hair, blue eyes, and light complexion; they are intelligent, active, and enterprising, and extremely fond of scientific pursuits.

Literature.—The literature of Scandinavia is adorned by many names of more than European reputation, especially in the department of physical science.

POETRY.—Sternhjelm, Dalin, Creutz,'Gyllenborg, Runeberg, Bishop Tegnor, Böttiger, Atterbom, Franzen, Nicander, Kellgren.

HISTORY.—Geijer, Fryxell, Dalin, Lagerbring, Strinnholm, Ekelund, Ahlquist.

PHYSICAL SCIENCE.—In botany, Linnæus, Fries, Wahlenberg, and Hasselquist; in chemistry, Scheele, Bergmann, and Berzelius; in mineralogy, Rinmann; in medicine, Rosenstein; in mechanics, Polhem, Alströmer, and Swedenborg; in mathematics, Celsius and Klingenstierna; in architecture, Tessin; in geography, Forsell; and in ethnography, Professor Nilsen.

MORAL SCIENCE.—Grubbe, Biberg.

THEOLOGY.—Wingard, Wallin.

FINE ARTS.—In sculpture, Bystrom and Göthe; in painting, Fahlcrantz and Hörberg.

MISCELLANEOUS.—Cederborg, Livijn, Frederica Bremer, Baroness Knorring, Engström, Hopken, Hermanson, and Almquist.

21. **Government, &c.**—Norway is a limited hereditary monarchy, united with Sweden since 1814, each country retaining its own laws and legislative assemblies. The reigning sovereign resides in Sweden the greater part of the year, but is bound to visit Norway annually. In the absence of the king, Norway is governed by a viceroy, who resides at Christiania. The Legislative Assembly of Norway is called the Storthing ("great court"), a body which possesses greater powers than even the British Parliament,—a bill after being passed in three successive assemblies becoming law, even without the royal assent. The Swedish National Assembly is called the Diet, which consists of four Chambers, and shares the legislative power with the sovereign.

Army and Navy.—The armies of the two countries are separate, but in time of war both are commanded by the king. In 1856 the Swedish army numbered 116,000 soldiers, and the Norwegian 23,500. The united navy amounted to 330 vessels of all sizes, carrying 660 guns. The *Public Debt* in 1854 amounted to £896,860, and the *Revenue* in 1858 to £925,900.

22. **Commerce.**—At the end of 1855 the mercantile marine of both kingdoms comprised 3772 ships, carrying 191,544 lasts, and 22,900 men. The foreign trade is principally with Russia, Denmark, Great Britain, Portugal, and Germany. The chief *Exports* from Norway are timber, tar, and the products of the mines, especially iron, copper, and silver; while those from Sweden consist principally of iron, timber, copper, cobalt, timber, tar, pitch, turpentine, rye, and oats. The main *Imports* into both countries are salt, grain, and articles of colonial produce.

The *Manufactures* of Sweden consist chiefly of articles of home consumption, as woollen, cotton, and linen cloth, sugar, tobacco, and paper. Tanning is an important branch of industry; distilling and brewing are extensively prosecuted; and ship-building is carried on to some extent. There are few manufactures in Norway: brandy distilleries and saw-mills are numerous; next to these are forges and metal-foundries, the produce of which is generally exported in a raw state. Iron-wire and nails are important items of industry, as also coarse woollen, linen, and cotton cloth for domestic use, glass, paper, oil, gunpowder, soap, tobacco, sugar-refining, and ship-building.

23. **Internal Communication.**—This is very deficient, especially in Norway, where few of the rivers are navigable for any considerable distance. The Glommen, the largest river in the kingdom, is navigable for only 14 miles; but regular steam communication has been established between the towns along the coast. A railway is in progress between the capital and Lake Miösen, and there are good roads between the towns on the south coast. There are no canals, and no public conveyances in the kingdom; but to facilitate communication, stations have been established at distances of 7 to 10 miles, at each of which the neighbouring farmers are obliged to furnish horses to convey the traveller to the next station. In Sweden the facilities for transit are greatly more numerous: the main roads leading from the capital are generally excellent. The principal canals are the Göta Canal, which connects the Kattegat with the Baltic, by the Göta river and Lakes Wener and Wetter; the Trolhätte Canal, near the efflux of the Göta from Lake Wener, to avoid the celebrated Trolhätta Fall; the Hielmar or Arboga Canal, uniting Lakes Mælar and Hielmar; and the Södertelge Canal, joining the southern extremity of Lake Mælar with the Baltic. In 1858 there were 150 miles of railway open in the peninsula, of which 68 miles belonged to Sweden.

24. **Foreign Possessions.**—The only foreign possession belonging to Sweden is the small island of St Bartholomew in the West Indies. It was ceded by France to Sweden in 1784, has an area of 35 square miles, and a population of 10,000.

ASIA.

1. **Position and Boundaries.**—N., the Arctic Ocean; W., the Ural Mountains, Ural River, Caspian Sea, Mount Caucasus, Black Sea, Sea of Marmora, Mediterranean Sea, Isthmus of Suez, and Red Sea; S., the Indian Ocean; and E., the Pacific Ocean.

Continental Asia extends from Cape Romania, lat. 1° 22′, to Cape Severo, lat. 78° 25′; and from Cape Baba, in Asia Minor, lon. 26° 4′ E., to Behring Strait, 170° W. It thus embraces 77° of lat. and 164° of lon. Kara Manna Nor, a small lake in southern Mongolia, about 8½° W. of Pekin, is the geographical centre of this immense area; but omitting the extreme eastern and western peninsulas, and reckoning from the 35th meridian, which passes through Sinope and Acre, to the 140th meridian, which passes through Jeddo and the mouth of the river Amour, the central point of continental Asia is Lake Lop Nor, in Chinese Tartary, lat. 40°, lon. 87° 30′.

2. **Coast Line.**—The coast line is variously estimated from 30,000 to 35,000 miles. The former gives one mile of coast to every 550 miles of surface; while Europe has one mile of coast for each 220 square miles.

3. **Area, and Extreme Points.**—The area of Asia, exclusive of the Malay Archipelago, is estimated at 16,915,227 square miles—or one-third of the land surface of the globe. It is more than four times the area of Europe, and larger than Europe and Africa put together, or even than North and South America. The extreme length, from Behring Strait to Strait of Bab-el-Mandeb, is 6700 miles; and the breadth, from Cape Severo in Siberia to Cape Romania in Malacca, 5400 miles. Cape Baba, in Asia Minor, is the most western point of the continent; and East Cape, in Behring Strait, which is only 36 miles distant from Russian America, the most eastern. Asia is connected with Africa by the Isthmus of Suez, 72 miles broad; while the Strait of Bab-el-Mandeb, which separates Arabia from Abyssinia, is only 20 miles wide.

4. **Population.**—The population is very variously estimated, there being no accurate census of most Asiatic countries. The *Physical Atlas* gives it at 652,500,000; but the sum of the populations of the different countries, as given in the annexed table, is 691,600,000, or about two-thirds of the population of the globe. Yet it is far less densely peopled than Europe, having only forty persons to each square mile. The most populous parts are China and the plains of Bengal; while the least populous are the marshy flats of Siberia, and the deserts of Arabia, Syria, Persia, and Central Asia.

5. **Political Divisions.**—The actual number of Independent States cannot be given with any degree of accuracy. Several of the countries enumerated in the following table contain, individually, a number of small states not acknowledging allegiance to any other power. Great Britain, China, and Russia, are considered powers of the first rank; Turkey, Persia, Burmah, Siam, and Japan, are of the second rank; while Bokhara, Muscat, and some others, are of third rank.

TABLE OF ASIATIC STATES.

M O	rea in Square Miles.	opu last			
Asiatic Turkey, in the e W. of the Conti ent,	,	16,050	Smyrna	Ægean Sea	150,00
Arabia, S. of Asiatic Turkey,	,200,	8,000	Mecca	Near Red Sea	30,00
Persia, S.E. of Asiatic Turkey,	450,	10,000	Teheran	S. Mount Elbu	60,00
Afghanistan, E. of Persia,	225,	5,120	Cabool	Cabool	60,00
Beloochistan, S. of Afghanistan,	160,	480	Kelat	Gundava	12,00
Hindostan, E. of Beloochistan,	1,383,	78,628	Calcutta	Hoogly	413,18
Further India, E. of Hindostan, comprising—					
British Possessions,	81, 06	2,255,	Moulmein	Coast of T rim	17,00
Burmah,	63, 00	8,030,	Monchobo	Near Irra	4,00
Laos,	30, 00	5,000,	nchang	Menam K	..
Siam,	20,	6,000,	k	Menam	100,00
Malaya,	45,	375,	, &c.	Strait of M	..
Anam,	40,	6,000,		Hué	100,00
Chinese Empire, N. of Further I ia,	5, 93,	04,600,		Pei-H	2,000,00
Independent Tartary, W. of Chinese Empire, co pris g—					
Kafiristan,	7,	50,	eish	Kamah	3,00
Kunduz and Budakshan,	50,	250,	z	Kunduz	5,00
Bokhara,	35,	1,500,	ra	Zerafchan	160,00
Khokan,	50,	2,000,	n	Syr Daria	100,00
Khiva,	20,	200,		Amoo	10,00
Kirghiz Territory,	07,	2,000,		People no	..
Siberia, N.E. of Independent Tartary,	93,25	2,887,		Irtish	16,00
Transcaucasia,	40	2,173,		Kur	34,85
n, E. of Chine Empire,				East Coast	2,000,00

6. **Surface, Plains, and Table-Lands.**—Nearly the whole of Siberia and Independent Tartary consists of one vast continuous lowland plain, of nearly twice the size of Europe, and only partially separated from the great European plain by the Ural Mountains. Only its southern portion is capable of cultivation. In the vicinity of the Arctic Ocean it forms a succession of desert tracts called *Tundras*, which in summer are covered with moss, and interspersed with lakes and marshes, and in winter are buried under a solid covering of ice. The eastern half is less uniformly level than its western, and is more generally covered with forests. It is subdivided by a low chain of hills (which connect the Urals with the Altai Mountains) into the *Siberian Plain*, extending from the Urals to the vicinity of Behring Strait; and the *Plain of Turkestan*, between the Caspian and the table-land of High Asia, a large portion of which, including the Caspian, is considerably under the level of the ocean. Other plains are *Mesopotamia*, or the lower basin of the Euphrates and Tigris; the *Thur*, or valley of the Indus; *Plain of Hindostan*, or valley of the Ganges; *Indo-Chinese Plain*, in Further India; and the *Chinese Plain*, or the lower basin of the Yang-tse-Kiang and Hoang-Ho. More than a half of the surface of Asia is occupied with an immense elevated plateau or table-land, extending without interruption for about 5500 miles, from the Mediterranean and Red Seas in the W., to the coast of Corea in the E., with a breadth varying from 2000 to 700 miles. It is divided into the following distinct portions: Plateau of Asia Minor, 3280 feet high, and plateau of Armenia, 7000 feet, bounded by Mount Taurus and the Caucasus; plateau of Arabia from 5000 to 8000 feet high, occupying the whole interior of that peninsula; plateau of Iran, 3500 feet, between the Persian Gulf and the plain of Turkestan; plateau of Pamir, 15,600 feet, N. of the Hindoo Koosh Mountains, and containing the Sir-i-Kol, the most elevated lake in the world; plateau of Tibet, from 10,000 to 14,000 feet N., of the Himalaya, and originating all the great rivers of Southern Asia; plateau of Gobi or Shamo, 3500 feet high, 1200 miles long, and from 500 to 700 miles broad, in Chinese Turkestan and Mongolia—it consists of an immense rainless desert of shifting sand containing no vegetation; plateaux of Malwa, Deccan, and Mysore, in Hindostan, from 2000 to 3000 feet high, and separated from the table-lands of High Asia by the valleys of the Indus and Ganges.

7. **Peninsulas and Isthmuses.**—The principal peninsulas are the following: Anatolia or Asia Minor, between the Black Sea and the Mediterranean; Arabia, between the Red Sea and the Persian Gulf; Hindostan, between the Arabian Sea and the Bay of Bengal; Further India, or the Eastern Peninsula, between the Bay of Bengal and the Chinese Sea; Malacca, a southern prolongation of Further India; Corea, between the Yellow Sea and the Sea of Japan; Kamtschatka, between the Seas of Okhotsk and Kamtschatka. Nearly all the Asiatic peninsulas stretch southward—the only exception being Asia Minor. The Isthmus of Suez connects Asia with Africa; the Isthmus of Kraw connects Siam with Malacca; the other isthmuses of Asia have no distinctive names.

8. **Capes.**—Baba, W. of Asia Minor; Ras-al-Had, S.E. of Arabia; Comorin, S. of Hindostan; Dundra Head, S. of Ceylon; Negrais, S.W. of Pegu; Romania, S. of Malacca; Cambodia, S. of Anam; King, E. of Japan; Patience, E. of Island Saghalien; Lopatka, S. of Kamtschatka; East Cape, the most eastern point of Siberia; Severo, or North-East Cape, N. of Siberia (lat. 78° 25′).

9. **Islands.**—Rhodes, Samos, Scio, Mitylene or Lesbos, in the Ægean Sea; Cyprus, in the Levant; Socotra, S. of Arabia; Ceylon, S. of Hin-

dostan; Hainan, S. of China; Formosa, E. of China; Japan Isles, E. of Chinese Tartary; Saghalien, a semi-peninsula, N.E. of Chinese Tartary; Kurile Islands, between Japan and Kamtschatka; Aleutian Isles, between Kamtschatka and Russian America; New Siberia, in the Arctic Ocean. For the islands of Malaysia (Sumatra, Java, Borneo, Philippine Isles, &c.), see under "Oceania."

10. **Seas, Gulfs, and Straits.**—Black Sea, N. of Asia Minor; Sea of Marmora, between Asiatic and European Russia; Ægean Sea, or Archipelago, W. of Asia Minor; Levant, W. of Syria; Red Sea, Strait of Bab-el-Mandeb, and Gulf of Aden, between Arabia and Africa; Arabian Sea, between Arabia and Hindostan; Persian Gulf, Strait of Ormuz, and Gulf of Oman, between Arabia and Persia; Gulfs of Cutch and Cambay, N.W. of Hindostan; Gulf of Manaar and Palk Strait, between Hindostan and Ceylon; Bay of Bengal, between Hindostan and Further India; Gulf of Martaban, between Pegu and Tenasserim; Strait of Malacca, between Malaya and Sumatra; Gulf of Siam, S. of Siam; Chinese Sea, between China and the Philippine Isles; Gulf of Tonquin, between Tonquin and the island of Hainan; Formosa Strait, between China and Formosa; Yellow Sea, or Whang-hay, between China and Corea; Strait of Corea, between Corea and Japan; Sea of Japan, between Japan and Chinese Tartary; Gulf of Tartary, between Chinese Tartary and Island Saghalien; Sea of Okhotsk, between Okhotsk and Kamtschatka; Sea of Kamtschatka, Gulf of Anadir, and Behring Strait, between Siberia and Russian America; Gulfs of Obi and Kara, N.W. of Siberia.

11. **Mountain Systems.**—The Bolor Tagh Mountains, in the S.E. of Independent Tartary, midway between Spain and Kamtschatka, and between Novaia Zemlia and Ceylon, is the grand centre from which all the great mountain-ranges of Asia and Europe diverge. This great primary chain stands on the lofty plateau of Pamir, between the sources of the Amoo and the Yarkand, and attains an elevation of 19,000 feet. The following are the principal chains that radiate from it in all directions:—

THE WESTERN SYSTEM.—This great range forms the northern boundary of the table-lands of Western Asia, and is then prolonged through European Turkey, till it reaches the Alps, Cevennes, and Pyrenees, terminating at the shores of the Atlantic. The Asiatic portion separates the waters flowing into the Indian Ocean from those that discharge themselves into the Black Sea, Caspian, and Sea of Aral. Its principal members are the following: 1. The *Hindoo Koosh*, separating the Punjab and Afghanistan from Independent Tartary, and the basin of the Indus from that of the Amoo; maximum elevation about 20,000 feet. 2. The *Paropamisan Range*, in Afghanistan, separating Turkestan from the plateau of Iran; highest summit, Mount Demavend, 21,500 feet. 3. The *Elburz Range*, S. of the Caspian, 20,083 feet high, and *Zagros*, or Mountains of Kurdistan, 12,000 feet, separate the basins of the Euphrates and Caspian: height of snow-line on the Elburz, 11,000 feet. 4. *Mountains of Armenia*, between the basins of the Caspian and Black Sea: highest summit Mount Ararat, 17,112 feet. 5. *Taurus* and *Anti-Taurus*, enclosing the table-land of Asia Minor, separates the basins of the Euphrates and Mediterranean from that of the Black Sea; highest summit Mount Argish, 13,000 feet. 6. The *Lebanon Range*, proceeding from Mount Taurus southward along the Syrian coast to Mount Hermon in the north of Palestine, 10,000 feet high, and thence continued through Palestine into the peninsula of Sinai—Mount Horeb, 8593 feet, Mount Sinai, 7497 feet. 7. *Mount Caucasus*, proceeding in a north-eastern direction from the centre of the Western System, and separated from the Mountains of Armenia by the valley of the Kur. (See under "Russia.")

THE SOUTH-EASTERN SYSTEM.—This system extends from the southern extremity of the Bolor Tagh to the Chinese Sea, and forms the southern wall of the lofty plateau of High Asia. It contains the loftiest elevations on the earth's surface, and consists mainly of the following chains: 1. The *Himalaya* ("abode of snow") between Hindostan and Tibet, and separating the basin of the Ganges from the upper basin of the Brahmapootra. The three loftiest peaks are Mount Everest or Gaurisankar, 29,002 feet above the level of the sea (the culminating point of Asia and the highest summit on the earth's surface), between Nepaul and Tibet, lon. 36° E.; Kunchinjunga, in Sikim, 28,150 feet; and Dhawalagiri, in Nepaul, 28,080 feet. Several other peaks in this range rise to an elevation of 25,000 feet, and not fewer than forty attain a height of 20,000 feet. The chain is 1500 miles long, and from 100 to 350 miles broad: height of snow-line on the south side, 12,982 feet, on the north side, 16,630 feet; highest elevation at which wheat grows, 13,000 feet. 2. The *Mountains of Assam*, separated from the Himalaya by the valley of the Brahmapootra. 3. The *Mountains of Aracan, Siam, Cambodia*, and *Anam* in Further India; elevation unknown.

THE EASTERN SYSTEM, extending from the Bolor Tagh due east to the Pacific Ocean, and consisting of two main sections: 1. The Kuen-lun Mountains, separating the upper basins of the Indus and Brahmapootra from that of the Yarkand, from 16,000 to 18,000 feet high. 2. The Pe Ling, between the Yang-tse-Kiang and Hoang-Ho. Several counterforts set out from the Pe Ling—viz., the Yun-ling, 12,000 feet, between China and Tibet; the Nan-ling, 8000 feet, between the basins of the Yang-tse-Kiang and Canton river; the Kihan-Shan, In-Shan, and Khin-gan Mountains, forming the S.E. wall of the desert of Shamo.

THE NORTH-EASTERN SYSTEM, extending from the Bolor Tagh to Behring Strait, separates the river-basins that incline to the Arctic Ocean from those inclining to the Pacific. It embraces—1. *Thian Shan*, or Celestial Mountains, in Chinese Turkestan, separating the basins of the Obi and the Yarkand; Pe-Shan (lon. 83° 30′ E.) 10,000 feet, being far above the limit of perpetual snow: Pe-Shan and Hotcheou are active volcanoes. 2. The *Altaian, Daurian*, and *Yablonoi Mountains*, between Siberia and Chinese Tartary, separating the basin of the Amour from those of the Yenisei and Lena; average elevation from 5000 to 7000 feet; Mount Bielukha (lon. 86° 30′) is said to be 10,300 feet high. 3. *Stanovoi* and *Aldan Mountains*, in Eastern Siberia, between the Arctic Ocean and Sea of Okhotsk—Schiwelutch, in Kamtschatka, 10,548 feet; Kliutshewskaja, 15,763 feet: these and many other summits are active volcanoes. The limit of perpetual snow in Kamtschatka is at an elevation of 4475 feet.

12. **Volcanoes.**—These are not numerous, except in Kamtschatka and the islands which line the eastern coast, especially the Japan, Aleutian, and Kurile Isles; Pe-Shan and Hotcheou, in the Thian-Shan range, are the most remarkable exceptions to the general rule of the proximity of volcanoes to the sea. EARTHQUAKES are numerous in S. and E. Asia, as also in Asiatic Turkey. (See under "Oceania.")

13. **Mountain Passes.**—These are very numerous, and many of them highly celebrated. Those across the Himalaya sometimes exceed by half a mile of elevation the loftiest summit of the Alps: thus the Karakorum Pass, which crosses the Kuen-lun Mountains, between Chinese Turkestan and Little Tibet, is 18,600 feet in elevation, and is the highest pass known; Parangla Pass, 18,500; Kronbrung Pass, 18,313; Door Ghât, 17,750 feet; Niti Pass, from Kumaon to Tibet (lon. 80°), is 16,814 feet high. The Khyber Pass, leading from Peshawur to Jelalabad, though narrow and dangerous, is the only route from Northern India to Afghanistan. The Bolan Pass, from Dadur to Quettah, 5793 feet high and 55 miles long, is the only practicable carriage route from the lower Indus to the table-land of Afghanistan. Bamian or Baumeean Pass, between the Hindoo Koosh and the Paropamisan Mountains, is the only pass practicable for artillery from Afghanistan into Independent Tartary. Pass of Keli-Shin, in the Zagros Mountains, 9600 feet high, leads from Persia to Baghdad. The Pass of Golek Boghaz (*Cilician Gates*, lat. 37° 13′, lon. 34° 50′), across the Taurus range, connects Cilicia with Cappadocia, and was the route by which Alexander the Great entered Cilicia. Pass of Beilan (*Syriæ Portæ*), between Mount Amanus and the Mediterranean, connects Asia Minor with Syria: this was the pass through which Darius fled, after his defeat by Alexander on the adjoining plain of Issus, B.C. 333.

14. **River Basins and Capitals.**—The River Systems of Asia surpass in number those of any other continent, though none of them attains the dimensions of the Amazon or Missouri. This is owing to the different disposition of the mountain-chains, which in America are placed on one side of the continent, whereas the principal chains and table-lands of Asia traverse its central regions, and send the rivers in five different directions, corresponding to the five great basins to which they respectively belong—viz., the Black Sea and Mediterranean, the Indian Ocean, the Pacific Ocean, the Arctic Ocean, and the basin of continental streams. The following Table shows the direct lengths and areas of the various River Basins, together with the capitals of the different states and principal divisions of states contained in them. When the name of the state is different from that of its capital, the former is added within parentheses :—

RIVER BASINS.	Direct Length	Area in Geographical Sq. Miles.	CAPITALS OF STATES AND PROVINCES.
1. *Basins inclined to the Black Sea and Mediterranean.*			
Kizil Irmak, ...	400	28,160	Sivas (Room).
Sihoon, ...	100	...	Adana (Itshil).
Jyhoon, ...	100	...	Marash.
Orontes, ...	200	...	(*Antaki*, anc. Antioch.)
2. *Basins inclined to the Indian Ocean.*			
Euphrates, ...	850	195,680	Erzroum, Aleppo, Shuster (Khuzistan), Khorumabad (Luristan), Baghdad, Mosul (Turkish Kurdistan), Diyarbekr, Van.
Indus, ...	950	312,000	HYDERABAD (Scinde), Iskardo (Bultistan), Leh (Ladakh), BAHAWULPOOR, LAHORE (Punjab), CASHMERE, CABOOL (Afghanistan).
Loony, ...	300	...	Jodhpoor, Ajmere.
Mahi, ...	200	...	BARODA (Gujerat).
Nerbudda and Tapty, ...	560	78,000	Baroche, Surat.
Cauvery, ...	320	...	MYSORE.
Kistnah, ...	500	81,600	Kolapoor, HYDERABAD.
Godavery, ...	550	92,800	NAGPORE.
Mahanuddy, ...	380	...	Cuttack, Sumbulpore.
Ganges, ...	1000	432,000	CALCUTTA (Bengal), Patna (Behar), Benares, Allahabad, Sikim, KHATMANDOO (Nepaul), LUCKNOW (Oude), Rewah, AGRA (N.W. Provinces), Bhurtpoor, Delhi, Saugor, Jhansi, Bhopal, GWALIOR, Dholpoor, Bundee, Kotah, Dhar, Jeypoor, Oodypoor (Mewar), Dewas, Oojein, Indore, Meerut, Bareilly (Rohilcund), Almora (Kumaon).

River Basin.	Direct Length	Area in Geographical Sq. Miles.	Capitals of States and Provinces.
Basins inclined to the Indian Ocean (continued).			
Brahmapootra,	700	330,000	LASSA (Tibet), Kooch-Behar, TASSISUDON (Bhotan).
Irrawaddy and Saluen, ...	800	331,000	MONCHOBO (Burmah), Pegu, Munipoor; Moulmein (Tenasserim Province).
3. *Basins inclined to the Pacific Ocean.*			
Meinam and Me-kong,...	1250	216,000	BANKOK (Siam); LANCHANG (Laos).
Choo-kiang, or Canton River,............	580	99,200	Canton, Kwei-lin (Kwang-se).
Yang-tse-kiang,	1800	547,800	Nankin (Kiang-soo), Ngan-king (Gan-hway), Woo-chang (Hoopih), Nan-chang (Kiang-se), Chang-sha (Hoo-nan), Kwei-yang (Kwi-chow), Ching-too (Ze-chuen), Yun-nan.
Hoang-Ho, ...	1150	537,400	Kae-fung (Ho-nan), Lan-chow (Kan-suh), Se-gan (Shen-se), Tae-yuen (Shan-se).
Amour, ...	1250	582,880	Saghalien-oula (Mantchooria).
Anadir, ...	350	63,360	(*Anadirsk*, in the Tchouk-chee country.)
4. *Basins inclined to the Arctic Ocean.*			
Kolyma, ...	500	107,200	(*Nijni Kolimsk*, in Yakutsk.)
Indigirki,.........	600	86,400	(*Zachiversk*, in Yakutsk.)
Lena, ...	1300	594,400	Yakutsk.
Olonek, ...	600	76,800	(*Olensk*, a village in Yakutsk.)
Yenisei, ...	1950	784,530	Krasnoïarsk (Yeniseisk), Irkutsk, Ourga (Mongolia).
Obi, ...	1800	924,800	Tobolsk, Tomsk.
5. *Basin of Continental streams.*			
Kur, ...	520	64,640	Teflis.
Volga, ...	900	397,460	(See under "European Russia.")
Ural,..............	550	83,200	Orenburg.
Amoo, ...	880	193,600	Khiva, Meshed (Khorassan), Herat, Bokhara, Kunduz.
Syr Daria, ...	720	237,920	Kokan.
Yarkand,.........	880	177,120	Yarkand (Chinese Turkestan).
Helmund, ...	420	76,380	Candahar.

15. **Lakes.**—The lakes of Asia are very numerous, especially in Asia Minor, Independent Tartary, and the great Central Basin. To Asia belongs the greatest lake in the world (the Caspian), and the largest fresh-water lake in the Old World (Lake Baikal). Beginning at the N. E. of Ottoman Turkey, and following, as usual, the order of the river-basins in which they occur, the following are the principal lakes:—

Kizil Irmak Basin.—Tuz-Gol, or Koch Hissar, a large salt-water lake in the centre of Asia Minor, 45 miles long, 16 miles broad, 3000 feet above the level of the sea, with no visible outlet.

Jordan.—Sea of Galilee; Dead Sea, intensely salt, 1312 feet below the level of the Mediterranean.

Euphrates.—Lake Van, in Turkish Armenia, salt; no visible outlet.

Indus.—Munchur, in Scinde; Wullur, in Cashmere; Rhawand-Rhad or Rowand, and Mansarowar, at the source of the Sutlej.

Brahmapootra.—Tengri-nor and Paltee, in Tibet.

Yang-tse-kiang.—Poyang and Tong-Ting, in China Proper.

Hoang-Ho.—Ko-ko-Nor, between Tibet and Chinese Tartary; no outlet.

Yenisei.—Baikal, in South Siberia, area 14,000 square miles, drained by the Angara.

Obi.—Zaisan, drained by the Irtish.

Basin of Continental Streams.—The Caspian, area 140,000 square miles, being the largest lake in the world, 84 feet below the level of the sea; Lake Urumiah, W. of the Caspian, very salt; Sea of Aral, 152 miles E. of the Caspian, receives the Amoo from Lake Sir-i-Kol, the highest lake known; and the Sir Daria, one of whose affluents drains Lake Touz in Chinese Tartary; Lake Balkash, 150 miles long and 75 broad, in Independent Tartary; Lop Nor, in the basin of the Yarkand, and Tengri Nor, in Tibet; Zurrah or Hamoon, in Afghanistan.

16. **Climate.**—Extending from the immediate vicinity of the equator to far within the Arctic circle, Asia exhibits every variety of climate, from the intense heat of the Torrid Zone to the extreme and long-continued cold of the circum-polar regions. Three climatal zones, however, are easily distinguishable. The most northern of these, which includes the great Siberian plain, is characterised by extreme cold for nine months in the year, then giving place to a brief period of excessive heat. The mean temperature of this zone extends from the freezing-point of water to below zero. The coldest portion of this dreary region, and, so far as yet known, of the whole globe, is in the lower basin of the Lena, where Yakutsk, for example, has a mean annual temperature of 13°·5; summer 61°·7, and winter —36°·3, or 36° below zero; being a difference of 98° between summer and winter. For the month of January, the mean temperature is —45°·5, while that of July is 68°·8 Fah. In Northern Siberia the ground is perpetually frozen to a geat depth, the superficial stratum alone thawing in summer. The rivers are not clear of ice till June; but as the ice melts in their upper courses earlier than in the lower, extensive areas are for a season under water. (See under "Siberia.") The Middle Zone, which embraces the high table-lands of the interior, is cold and dry, and subject to the influence of piercing winds from the north: here large tracts are seldom visited by rain, especially the great desert of Gobi or Shamo, a large portion of Beloochistan, Persia, Northern Arabia, and Southern Syria, in some of which a drop of rain is never known to fall, and in others only at long intervals, and in very small quantities. The Southern Zone, comprising all the countries south of the table-lands, is characterised by intense summer

heat, extreme moisture, and no real winter: here the rain falls with extreme violence at particular seasons of the year; at Calcutta no less than 64 inches fall annually; and at Bombay, 16 inches of rain have been known to fall in a single day.

17. **Geology.**—The geology of Asia has hitherto been very imperfectly explored, but the facts already ascertained warrant the following generalisations: TERTIARY AND ALLUVIAL DEPOSITS cover the plains of Siberia and Independent Tartary, of Hindostan, Further India, and China; the Arabian and Syrian deserts; and the table-land of Persia. SECONDARY STRATA embrace numerous tracts in Asia Minor, Palestine, and Western Syria, the north-western half of Persia, parts of Arabia and Beloochistan, Tibet, Central China, the eastern part of Mantchooria, and several tracts in the basins of the Lena and Oby. PALÆOZOIC AND TRANSITION ROCKS occupy extensive tracts lying to the N. of lakes Balkash and Baikal respectively, the Stanovoi and Aldan Mountains, portions of the middle basin of the Yenisei, and a long belt lying S. of the North-east Cape. Numerous large tracts of upper palæozoic also occur in Asia Minor. CRYSTALLINE STRATA prevail in the mountain regions of Central Asia, from Mount Elburz in the W., to the eastern extremity of the Yablonoi Mountains in the E., and from the Altai to the Chinese Sea; Siberia, E. of lon. 165°; many tracts in Asia Minor; together with the southern portions of the three principal peninsulas—Arabia, India, and Further India. IGNEOUS ROCKS prevail extensively in Asiatic Turkey, Central Hindostan, the mountain chains of Altai, Stanovoi, and Kamtchatka, and the Aleutian, Kurile, Japan, and Formosa Isles.

18. **Minerals.**—Asia has in all ages been celebrated for the number and variety of its mineral productions. *Diamonds* and other precious stones abound in India, Burmah, the Ural and Altai Mountains; *Coal* in Syria, Burmah, Hindostan, China, and Japan; *Salt*, in Asia Minor, Arabia, Hindostan, China, Siberia, and Central Asia; *Petroleum*, on the shores of the Caspian; *Bitumen*, in the Dead Sea; *Nitre*, in India; *Sulphur*, in Ladakh; *Gold*, *Iron*, *Copper*, and *Platinum*, in the Urals; *Gold*, *Silver*, *Iron*, *Lead*, in the Altai; *Mercury*, in China, Tibet, and Japan; *Tin*, in the Eastern Peninsula and Japan; *Volcanic products*, in the Taurus range and in Japan.

19. **Botany.**—The vegetable products vary exceedingly in the different countries, according to latitude, elevation, and other climatal influences. The entire continent embraces no fewer than eight of the twenty-five *botanic regions* into which Prof. Schouw divides the vegetation of the globe—viz., the 1st, 2d, 3d, 6th, 7th, 8th, 12th, and 13th of his system. (See Art. "Botany," p. 55.) The characteristic vegetation of the first three regions is given at length under "Europe," Art. 18. The sixth, or Japanese region, embraces Japan, Northern China, and the eastern part of Chinese Tartary. Its vegetation occupies a middle position between the floras of Europe and North America, with a considerable affinity to that of India, as shown by its palms and bananas. (See under "China and Japan.") The seventh, or Indian region, which embraces Hindostan, Ceylon, Further India, and the S. of China, and which is unrivalled for the richness of its vegetation, will be described under "Hindostan;" as also the eighth, or Emodic region, which comprises the mountains of Northern India, between the elevations of 5000 and 12,000 feet. The twelfth region, or Region of Balsam Trees, comprising the S.W. of Arabia, Persia, Beloochistan, and Scinde, will be noticed under the first of those coun-

tries; as will also the thirteenth region, usually known as the Desert Region, which comprises the remainder of Arabia and the great African desert.

20. **Zoology.**—The Asiatic continent constitutes the second of the six zoological kingdoms into which naturalists have divided the globe. (See p. 58.) It is divided into four zoological provinces—the Northern, Central, Southern, and Transition. The Northern province, or Arctic Asia, extends from the Arctic Ocean to the Altai mountains, and from the Urals to the Pacific Ocean; being bounded on the south by the isothermal curve of 32° Fah., which marks the limit of the permanent frost of the soil. The Central province extends from the Altai to the Himalaya and Hindoo-Koosh Mountains, and from the Caspian Sea to Japan. The Southern province, or Tropical Asia, comprises all the remaining countries of Asia lying east of the table-land of Iran; while the Transition province embraces western Asia south of the Caucasus, the Caspian Sea, and the Paropamisan Mountains. The fauna of the last-named region is peculiar, and forms a connecting link between the three zoological kingdoms of Europe, Asia, and Africa. The fauna of the Northern province resembles that of northern Europe; while in the Central and Southern provinces are found the elephant, rhinoceros, Bengal tiger, and many other formidable animals, together with the camel, auroch, yak, musk-deer, argal, and Tibet goat. It is probable that all the domestic animals of Europe, with the exception, perhaps, of the sheep, have been originally derived from these two provinces. Asia has comparatively a less variety of birds and reptiles than of quadrupeds; but the cassowary, bustard, pheasant, domestic fowl, and a number of other gallinaceous birds, are abundant; while, among reptiles, the Indian python, the cobra de capella, and the crocodile, or gavial of the Ganges, are formidable in the extreme.

The following tables—the materials of which have been derived, for the most part, from "Johnston's Physical Atlas"—present an accurate synopsis of the fauna of Asia, so far as presently known. The first column gives the name of the order; the second, the total number of species presently known; the third, the total number found in this continent; while the remaining three columns show the number of species found in Northern, Central, and Southern Asia, respectively.

ORDERS.	Total Number of Species.*	No. of Spec. in Asia.†	ASIA.		
			N.	C.	S.
ASIATIC MAMMALS.					
Quadrumana,	170	49	...	6	9
Carnivora,	514	276	36	55	166
Marsupialia,	123	4	...	...	...
Rodentia,	604	185	42	20	32
Edentata,	28	5	...	...	2
Pachydermata,	39	17	...	6	4
Ruminantia,	151	67	11	17	25
Cetacea,	75	29	24	...	...
Totals,	1704	632	113	104	238

* According to the "Physical Atlas."

† Including Malaya.

ORDERS.	Total Number of Species.*	No. of Spec. in Asia.†	ASIA.		
			N.	C.	S.
ASIATIC BIRDS.					
Rapaces (Birds of Prey), ...	...	59	4	14	41
Scansores (Climbers), ...	...	95	2	7	86
Oscines (Songsters), ...	...	221	9	20	192
Gallinaceæ (Gallinaceous Birds), . .	...	85	5	8	72
Grallatores (Waders), ...	...	100	24	26	50
Natatores (Swimmers), ...	...	86	39	28	19
Totals, ...	6226	646	83	103	460
ASIATIC REPTILES.					
Testudines (Tortoises), ...	69	27	...	4	23
Sauria (Lizards), ...	203	67	5	17	45
Ophidia (Serpents), ...	265	126	6	15	105
Batrachia (Frogs), ...	120	17	3	8	6
Totals, ...	657	237	14	44	179

21. **Ethnography.**—Leaving out of view the Malay peninsula, which more properly belongs to Oceania, the entire Asiatic continent is peopled by two great races of the human family—the Mongolian and the Caucasian.

MONGOLIAN RACE.—Asia is peculiarly the home of the Mongol race, and Mongol nations occupy by far the greater portion of its surface. The river Brahmapootra, the Himalayan, Hindoo-Koosh, and Paropamisan ranges of mountains, together with the Caspian Sea, form the great natural barriers that separate this race from the Caucasian. Mongol nations thus occupy the whole of Northern, Central, and Eastern Asia, together with a part of Asia Minor, the inhabitants of which form a connecting link between the Mongolian and Caucasian races. For their physiological, intellectual, and moral characteristics, see above, at page 63. The languages spoken by the Mongol nations all belong to two great classes—the Monosyllabic and the Finno-Tartarian. The former is confined to the south-eastern angle of the Continent, and is spoken in China, Further India, Bhotan, and Tibet. The languages comprised under it, besides being monosyllabic, are wholly destitute of inflection; their alphabets are generally symbolic or ideographic (not phonetic); they are inartificial in their structure, and very limited in the range of their literature. The *Finno-Tartarian* family of tongues, though not altogether peculiar to Mongol nations, occupies the entire remainder of the Mongolian area—viz., Northern and Central Asia—and extends westward into Northern and even Central Europe. Its principal branches are the Turkish, Mongolian, and Tungusian, of Central Asia; the Japanese, Loo-Choonn, and Corean, of Eastern Asia; the Georgian and other languages of the region of the Caucasus; the Samoiede and Finnish, of the north part of both continents; and the Magyar or Hungarian, of Central Europe. All these languages are more or less inflexional and polysyllabic, possess phonetic alphabets, are more refined than the monosyllabic group, while one of them—the Turkish—contains a highly respectable literature. Modern research has established an undoubted affinity between the monosyllabic and Finno-Tartarian families. The religious aspirations of the entire Mongol family have always been obtuse and of a very low order. Shamanism, or demon-worship, and polytheism, at one time widely prevailed; but the nations speaking monosyllabic tongues have now for the most part adopted Buddhism, while the Turanian nations have become Mohammedans.

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* According to the "Physical Atlas."

† Including Malaya.

CAUCASIANS occupy the remainder of Asia—their territory being bounded by the Caspian, Black Sea, the Hindoo-Koosh, and Himalaya on the N.; by the Red Sea and Indian Ocean on the W. and S.; and by the Bay of Bengal and Brahmapootra on the E. The Hindoos, Medo-Persians, and Syro-Arabians, form the three primary divisions of the Caucasian race in Asia.

The *Hindoos and Medo-Persians* appear to have been originally one people, to have spoken the same language, and to have occupied, in common, the plateau of Iran; but at a time anterior to the dawn of history, the Hindoos migrated eastward and settled in the plains of Hindostan, from which they expelled the aboriginal inhabitants, who were probably of Mongolian origin. Their language was the Sanscrit—a tongue of unparalleled copiousness and refinement; and, though it is now a dead language, all the tongues presently spoken in Northern India are immediately derived from it. Brahminism and Buddhism—those two master forms of false religion—originated with this people, and continue to be professed by more than a half of the human race.

The *Medo-Persian* group of nations occupies about a tenth part of the surface of Asia, embracing Persia, Beloochistan, Afghanistan, and the greater part of Turkestan and Armenia. The origin of these nations has never been accurately ascertained. Their very existence had been scarcely known beyond the elevated plateau which, from time immemorial, they appear to have occupied, when all at once they advanced from obscurity to empire. Emerging from their mountainous abodes, they captured Babylon the Great, and founded an empire which, in point of extent, exceeded even that of Rome. Their physical conformation, which is decidedly of the European type, corroborates the testimony afforded by their languages, as to their affinity with the principal nations of Europe. Their languages form an important branch of the great Indo-European family, and embrace the Persian, Pushtoo, Beloochee, Kurdish, Ossitinian, and Armenian. A Shemitic language—the Pehlvi—is supposed to have been predominant at a very remote period in Persia, though it originated in the provinces bordering on Assyria; but under what circumstances it became the general language of Media, is still matter of conjecture. A yet more ancient language is the Persepolitan, a true Medo-Persian idiom, vestiges of which are preserved in arrow-headed or cuneiform characters (like those of Assyria), on the monumental inscriptions recently discovered among the ruins of ancient Persian cities. The Zend language, now extinct, was another Medo-Persian tongue, and a sister dialect of the Sanscrit. It seems to have been the language of Zoroaster, and is still partially preserved in the sacerdotal books of the Guebres and Parsees. The earliest religion of the Medo-Persian nations was fire-worship, but they are now, with few exceptions, followers of Mohammed—the Armenians being the only nation of this stock by whom Christianity has been received.

The *Syro-Arabian or Shemitic* nations are chiefly confined to this continent, and especially to its south-western angle—viz., Arabia, Syria, and the basin of the Euphrates and Tigris. In perfection of physical conformation, the Syro-Arabians are regarded by eminent physiologists as equalling, if they do not indeed surpass, all the other branches of the human family. Yet their characteristics are by no means uniform. The Syrians, who still preserve their lineage pure and unmingled among the mountains of Kurdistan, have a fair complexion, with grey eyes, red beard, and a robust frame. The wandering Arab of the Desert is thin and muscular in form, with deep brown skin, and large black eyes; in the valley of the Jordan he has a dark skin, coarse hair, and flattened features, somewhat resembling the Negro type. The Jew is easily distinguished, in whatever country he takes up his abode, by his long oval face, and the peculiar cast of his physiognomy, though his hair is found of all shades, from jet-black to red. The Shemitic languages are remarkably few in number, but, as a compensation for this, they can claim the highest antiquity, and are spread over an immense portion of the surface of the earth. They extend, without interruption, from the Persian Gulf and Lake Urumiah to the Atlantic, and from the Mediterranean and Mount Taurus to an undefined distance into the interior of Africa, where they come in contact with the Hamitic or African family. They are bounded on the east and north by the Indo-

European or Japhetic family, and at one point (Asia Minor) come in contact with the Turkish—a Finno-Tartarian tongue. From the earliest times they were native in Palestine, Phœnicia, Syria, Mesopotamia, Babylonia, and Arabia—thus extending from the Tigris to the Mediterranean, and from the Armenian Mountains to the south coast of Arabia. The Phœnicians sent colonies at a very remote age to numerous islands and shores of the Mediterranean, and thus carried their language from Tyre and Sidon to the Pillars of Hercules; while the Arabians, on the other hand, carried their language across the Red Sea into Ethiopia.

TABLE OF SHEMITIC LANGUAGES.

The Hebrew or Phœnician Branch, including—
- Canaanitish or pure Hebrew, in Canaan.
- Phœnician and Punic, in Phœnicia and Carthage.
- Samaritan, in the Kingdom of Samaria, forming a connecting-link between the Hebrew and Aramean branches.

The Aramean or Syrian Branch, viz.—
- Chaldee or East Aramean in Mesopotamia.
- Syriac or West Aramean, in Syria.
- Modern Syriac, a corrupt dialect of the Syriac, is still preserved among the mountains of Armenia, Persia, and Mesopotamia.

The Arabian Branch—
- Koreish, originally spoken in North Arabia, the parent of Modern Arabic.
- Hamyaritic, the parent of the Ekhkili, the ancient dialect of South Arabia.
- Modern Arabic, in Arabia, Syria, and Northern Africa.
- Ekhkili, spoken by a mountain tribe in Hadramaut.
- Gheez or Ethiopic, derived from the Hamyaritic, was anciently spoken in Ethiopia (Abyssinia), but is now superseded by its two dialects, the Tigré and Amharic.

ASIATIC TURKEY.

Boundaries.—N., Transcaucasia, the Black Sea, and Sea of Marmora; W., the Archipelago and Levant; S., the Mediterranean, Arabia, and the Persian Gulf; and E., Persia and Transcaucasia. Lat. 30°—42° N., lon. 26°—48° E. Aleppo, one of the principal commercial emporiums of the Ottoman Empire (lat. 36° 11′, lon. 37° 10′), is situated almost exactly in the centre of this wide area. It is in the same latitude as San Francisco, North Carolina, Gibraltar, Algiers, Malta, Rhodes, Mosul, Teheran, and King-ki-tao in Corea; and in the same longitude as Moscow, Kertch, Sinope, Gondar, and the mouth of the river Zambesé.

Area and Population.—The area is estimated at 669,674 square miles, and the population at 16,050,000. Hence Ottoman Asia, though five and a half times larger than the British Islands, is greatly exceeded in population by England and Wales. Its length, from Cape Baba to Mount Ararat, is 970 miles, and its breadth, along the 35th meridian, 770 miles.

Surface.—That of Asia Minor is mountainous, having a high table-land in the interior, and rich plains along the sea-coast. In Armenia the surface is a succession of high mountain-chains and elevated valleys. In Syria the western part is traversed by a great chain of mountains, while the eastern is an immense desert plain. Mesopotamia consists partly of a continuation of the great Syrian Desert, and partly of alluvial soil once profusely watered by canals, but now unproductive through inactivity and misgovernment.

Political and Natural Divisions.—The Ottoman Empire in Asia comprises four great natural divisions—viz., 1. Turkish Armenia, in the N.E., now separated from the Russian governments of Transcaucasia by the Aras or Araxes, and extending westward to a line drawn from the city of Trebizond to the Bay of Iskenderun. 2. Asia Minor, in the N.W., between the line above mentioned and the Archipelago, and between the Black Sea and the Mediterranean. 3. Syria, including Palestine, in the S.W., skirting the whole eastern shore of the Mediterranean from Mount Amanus to Arabia Petrea, and extending eastward to the Euphrates and the Syrian Desert. 4. Mesopotamia (including Irak Arabi and Al Jezira), and Turkish Kourdistan, in the S.E., between Persia and the Syrian Desert, and comprising almost the entire basin of the Euphrates and Tigris. The Political Divisions, which are named *pashalicks*, vary greatly in number and magnitude, according to the varying power of their respective governors.

TURKISH ARMENIA, THREE PASHALICKS.

Trebizond.—TREBIZOND 30, Batoum 3, Gunieh, Rizah 30, Tireh-boli, Kerasun 3 (north coast), Artvin 7 (Joruk or Tchoruk).

Erzroum.—ERZROUM 40 n., Erzingan 15 (W. Euphrates), Mush 6 (E. Euphrates), Kars 12 n., Bayazid 5 n. (Aras).

Van.—VAN 40, Akhlat or Ardish 6 n., Betlis 15 (Lake Van), Julamerk n. (Great Zab).

ASIA MINOR, SIX PASHALICKS.

Sivas or **Room.**—SIVAS 30, Iskelib 9 n., Tchorum 8 n. (Kizil Irmak), Amasia 20, Tokat 33 n., Marsivan 30 n. (Yeshil Irmak), Arab Gir 30 (Euphrates), Samsun 2 (north coast).

Anatolia.—SMYRNA 150 (Gulf of Symrna), Sinope 10, Eregri or Erekli (north coast), Bartan 10, Zafran-Boli 15 (Chati Su), Boli 6 (Filiyas), Shugshut 8, Kutaya 50 n. (Sakaria), Angora 15 (Murtadabad), Kankari 18 n. (Kizil Irmak), Tash-Kupri 8, Kastamuni 12 (Kara Su), Tosia 15 (Devrek), Scutari 60 (Bosporus), Ismid 5, Isnic n., Brusa 60, Muhalitch 11 n. (Sea of Marmora), Bunarbashi (Scamander), Adramiti 5, Scala Nova 20 (west coast), Bergamo (Caïcus), Manissa 20 (Kodus), Ak-Hissar 6 (Phrygius), Sart (Pactolus), Alla Shehr 15 (Coganus), Aidin 30, Afium Kara Hissar 60 n. (Mendereh), Eski-Hissar, Khonas (Lycus), Budrum 11, Makri, Adalia 8 (south coast).

Adana or **Itshil.**—ADANA 10 (Sihoon), Alaya (south coast), Selefkeh (Ghiuk), Tarsus 7 (Cydnus).

Karamania or **Konieh.**—KONIEH 30 n. (Lake Beg-Shehr), Ak-Shehr 7 (Lake Ak-Shehr), Karaman 7 (west of Lake Ak-Gol), Kaisarieh 40, n. (Kizil Irmak), Gurun 8 (Tokhma Su, *affl.* Euphrates).

Marash.—Marash 18 (Jyhoon), Malatiyeh n. (Euphrates).

Cyprus.—Lefkosia or Nikosia 12, Famagusta (Pediæus), Larnica 3 (south-east coast), Baffa (south-west coast).

Syria, including Palestine, five Pashalicks.

Aleppo.—Aleppo 80 (Koik), Iskenderun or Scanderoon, Beilan 5 (Gulf of Scanderoon), Antioch or Antaki 10 (Orontes), Aintab 20 (60 miles N. Aleppo).

Tripoli.—Tripoli or Tarablous 18, Latakia or Ladikiyeh 7, Tartous; Jebail 6 (coast).

Acre.—Acre or Akka 10, Beirout 12, Deir-el-Ahmar, Saida or Sidon 6, Sur or Tyre 5, Kisarieh (coast), Baalbec 2 (Litany or Leontes), En-Nasirah or Nazareth 3 n. (Kishon), Sebustieh or Samaria, Nablous or Shechem 8 (Arsuf).

Gaza.—Gaza or Ghuzzeh 15, Jaffa or Joppa 4, El Arish (coast).

Damascus.—Damascus or Esh Sham 100 (Burada), Hamah 44, Hems 30 n. (Orontes), Palmyra or Tadmor (in an oasis in the Syrian Desert), Jerusalem 20 (Kedron), Hebron or Khalil 10 (Eshcol), Beit Lahm 4 (Sorek), Jericho or Eriha n. (Jordan).

Mesopotamia and Turkish Kourdistan, three Pashalicks.

Baghdad.—Baghdad or Bagdad 65, Samara (Tigris), Bassorah or Basra 60, Korna 4, (Shat-el-Arab), Shuk-el-Shuyuk 10, Mesjid n., Hillah or Babylon 10, Kerbela n., Hit 7, Anah 9, Kirkissa, Dier (Euphrates).

Diyarbekr.—Diyarbekr 13, Sert n. (Tigris), Kerkisiyah, Rakkah 8, Bir 4, Palu 5 (Euphrates), Nizibin n., Mardin n. (Khabour), Harran, Orfah 13 (Belikh).

Turkish Kourdistan.—Mosul 40, *Ruins of Nineveh*, Senn, Til Afar 5 n. (Tigris), Arbel 6 n. (Great Zab), Amadiah (Khabour), Kerkook n. (Little Zab), Suleimaniyeh 5 (Diyalah).

Descriptive Notes.—Asiatic Turkey is very thinly peopled: of its one hundred and thirty towns enumerated in the text, only fifty-three contain more than 10,000 inhabitants; twenty-six have 20,000; nine have 50,000; and two (Smyrna and Damascus) upwards of 100,000.

Armenia.—*Trebizond*, the ancient Trapezus, so called from its shape, which resembles a trapezium, is an important fortified sea-port, and the natural entrepôt of the European trade with Armenia, North Persia, and Transcaucasia: in 1846 its exports—chiefly silks, wool, tobacco, wax, opium, and other drugs—were valued at nearly half a million, and its imports at a million and a half: it was at this point that Xenophon with his ten thousand Greeks reached the coast, on their memorable retreat after the battle of Cunaxa. *Erzroum* or *Erzeroum*, the principal city of Turkish Armenia, in an extremely fertile district, has extensive trade with all the adjacent countries, and is a chief halting-station of caravans travelling from Teheran to Mecca. *Kars*, near the Russian frontier, occupies an elevated and commanding position: it was taken by the Russians in 1855, after a gallant defence by the Turks. *Van* is a fortified city with a flourishing trade, and possesses some remarkable antiquities, which have been attributed to Semiramis. *Betlis* or *Bitlis*, with manufactures of cotton cloths celebrated for their bright red colour: near it the army of Solyman the Magnificent was defeated by the Persians in 1554. *Julamerk*, the chief town of the Nestorian Christians.

ASIA MINOR.—*Sivas* or *Siwas* has manufactures of coarse woollen and other fabrics, with a considerable transit trade. *Tokat* (Eudokia), a considerable depôt for agricultural produce, has manufactures of silk and calico, and a copper refinery. *Arab Gir*, a thriving town on the route between Trebizond and Aleppo. SMYRNA (Turk. *Ismir*), the capital of Asiatic Turkey, and one of the largest and richest cities in the empire: its foreign trade is very extensive, especially with Great Britain, Austria, France, and the United States: it is the rendezvous of merchants from all parts of the world, and the residence of consuls from most of the European States: its imports alone are valued at £6,000,000 annually: it claims to be the birthplace of Homer, occupies a distinguished place in the early history of Christianity, was the scene of the labours and martyrdom of Polycarp, and is the only one of the great ancient cities on the western coast of the peninsula which has survived to this day.* *Sinope* or *Sinoub*, long famous for its commerce, continues to be the best port on the north coast of Asiatic Turkey: here, in November 1853, the Russian fleet, emerging from Sevastopol, attacked and destroyed a Turkish squadron, consisting of thirteen ships, lying at anchor in the roadstead, when four thousand Turks were cruelly butchered. *Eregri* or *Erekli* (Heraclea Pontica); here Xenophon and the ten thousand Greeks embarked on their homeward journey: it has a good port with shipbuilding yards, and exports timber, silk, and wax. *Kutaya* (Cotyæum), a large populous city, sometimes regarded as the capital of Anatolia, has numerous mosques, public baths, and khans, and a large trade in goats' hair, wool, and agricultural produce. *Angora* (Ancyra), long famous for the fine silken hair obtained from a species of goat, and used in the mauufacture of shawls. Here the army of Bayazid, the Ottoman Sultan, was defeated by the Mogul host, under Tamerlane, in 1402. *Scutari* (pronounced *Scoo'-ta-ri*), a large and populous town on the Bosporus, opposite Constantinople, of which it is usually considered a suburb: it represents the ancient Chrysopolis, which was the port of Chalcedon—a famous city in the immediate vicinity, where the fourth general council of the Church was held, A.D. 451. *Ismid* (Nicomedia), the residence of a Pasha, and of Greek and Armenian archbishops, was anciently the seat of the kings of Bithynia. Dioclesian made it the capital of the Roman empire. It was the birthplace of Arrian the historian, and the residence of Hannibal and the younger Pliny. *Isnic* (Nicæa), a poor mean town, famous in ecclesiastical history as the place where the first general council was held, A.D. 325. *Brusa* (Prusa), once the capital of Bithynia, is one of the most flourishing emporiums of commerce in Asiatic Turkey. *Bunarbashi*, a village 9 miles S.S.E. of the western entrance of the Hellespont, probably occupies a part of the site of ancient Troy. *Manissa* (Magnesia ad Sipylum), famous for its loadstones (hence called *magnets*), and for the victory gained by the two Scipios over Antiochus the Great, which secured to the Romans the empire of the East. *Aidin* or *Ghuzel-Hissar* (Tralles), about 60 miles S.E. of Smyrna, is an important commercial city, and next in rank to Smyrna, with which it is now connected by a railway, the first and only one in Turkey. *Kara-Hissar* or *Afium Kara-Hissar* ("The Black Castle of Opium"), so named from its trade in that commodity, raised in the vicinity. *Budrum* (Halicarnassus), the birthplace of Herodotus and Dionysius, and the place from which were obtained the celebrated marbles of Halicarnassus, now deposited in the British Museum. *Adana* has a trade in wool, cotton, corn, wine, and fruit. *Tarsus*, a celebrated city, and the ancient capital of Cilicia, was the birthplace of St Paul the Apostle, and many other illustrious men. *Konieh* (Iconium), was visited by St Paul in his missionary travels: in the middle ages it was one of the greatest cities in Asia Minor, and is now a place of considerable trade. *Ak-Shehr*, a small town built on the ruins of the once famous Antioch in Pisidia. *Karaman* (Laranda), was, from 1300 to 1486, the capital of a flourishing kingdom. *Kaisarieh*, the ancient Cæsarea Mazaca, was the capital of Cappadocia, and one of the most ancient cities in Asia Minor; it is still a place of great commercial importance, and has mines of iron and steel in the vicinity. *Lefkosia*, *Larnica*, &c., see Notes on the Islands.

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* The other six cities to which St John addressed epistles were—*Pergamos* now Bergamo, 48 miles N. of Smyrna; *Thyatira*, now Ak-Hissar, 60 miles N.E.; *Philadelphia*, now Allah-Shehr, 85 miles E.; *Sardis*, now the miserable village Sart, 50 miles E.; *Laodicea*, now the poor village Eski-hissar, 120 miles S.E.; and *Ephesus*, now represented by heaps of ruins near Ayasaluk, 40 miles S. of Smyrna.

Syria and Palestine.—*Aleppo* or *Haleb*, the principal city in North Syria, rose to importance on the destruction of Palmyra, and became the great emporium of trade between Europe and the East—a distinction which its favourable position is likely to secure to it in the future. Previous to the earthquakes of 1822 and 1830 its population amounted to 250,000. It has long been celebrated for its silk and cotton manufactures and for its productive gardens. *Iskenderun*, *Scanderoon*, or *Alexandretta*, has the best harbour on the Syrian coast. *Antioch* (Turk. *Antaki*), once the proud capital of Syria, and second to no city in Asia, was built by Seleucus Nicator, about B.C. 300: situated on the high road between Europe and Asia, and the Orontes being navigable up to the city, its commerce has been always extensive: it was one of the earliest strongholds of the Christian faith, and here the disciples of our Lord were first called Christians, though now it does not contain a single Christian church. *Tripoli* (anc. *Tripolis*, Turk. *Tarablus*), on the coast and at the foot of a spur of Mount Lebanon, is surrounded by luxuriant gardens and remains of the architecture of the middle ages: it was taken by the Crusaders in 1108, when its large and valuable library was consigned to the flames: the principal exports are soap and sponges. *Acre*, *Akka*, or *St Jean D'Acre*, the ancient Ptolemais, at the foot of Mount Carmel, is one of the oldest cities of Phœnicia: it was the key of the passage between Palestine and Cœle-Syria, and rose to importance as a commercial and military station after the decline of Tyre: it is celebrated for the memorable sieges it has sustained, and was reduced to a heap of ruins by the British fleet in 1840. *Beirout* or *Beyrout* (Berytus), is the port of Damascus and Central Syria, and has more commercial activity than any other Syrian port; valuable mines of coal and iron have been found in the vicinity. *Saida*, anc. Sidon or Great Zidon, probably the most ancient, and for a long time the most powerful city of Phœnicia, till eclipsed by its colony, Tyre: it was long famous for its manufactures of glass, a substance which it is said was first invented here. *Sur* or *Tyre* (Tyrus), soon eclipsed its parent Sidon, and became one of the greatest and most famous cities of the ancient world: as early as the 11th century before the advent of Christ, the Tyrians had became famous for their skill in various manufactures and arts: the trade of Tyre was commensurate with its manufactures—"Its merchants were princes, its traffickers were the honourable of the earth" (Is. xxiii. 8): at a very early period it carried its commerce beyond the pillars of Hercules, and founded colonies at Cadiz, Cyprus, Carthage, and other places: it was successively beseiged by Shalmaneser and Nebuchadnezzar, and in B.C. 322 it was taken and sacked by Alexander the Great, after which it never regained its former importance, its commerce having been transferred to Alexandria: the wars of the Crusades completed its ruin, and its site is now occupied by a miserable village which exports a little tobacco, cotton, charcoal, and fuel. The downfall and permanent desolation of Tyre is one of the most memorable accomplishments of prophecy which the annals of the world exhibit. *Kaisarieh* (Cæsarea), memorable in the early history of Christianity as the place where the Gentiles were first received into the Christian Church: under the Romans it was the capital of Palestine, and the residence of a procurator, and remained a place of importance until the middle ages, when it was reduced to ruins by the Crusaders: here Eusebius, the celebrated church historian, was born, and here Origen studied and wrote commentaries. *Baalbec*, probably the Baalath of Scripture and Heliopolis of the Greeks, a very ancient and celebrated city on the Orontes, in the middle of the great valley of Baca, afterwards called Cœle-Syria, 43 miles N.W. of Damascus: here was erected a stupendous temple by Antoninus Pius, which was reckoned one of the wonders of the world; and here are still seen ruins more numerous and magnificent than anywhere else in Syria, with the exception of Palmyra: Baalbec continued to be a place of great importance down to the time of the Moslem invasion, but is now only a village of 2000 inhabitants. *En Nasirah*, the ancient Nazareth, where the parents of Jesus resided, and where he lived till the commencement of his ministry: it is a small, well-built town, containing about

3000 inhabitants, of whom about two-thirds are Christians. *Sebustieh*, the ancient Samaria, and afterwards Sebaste, founded by Omri, King of Israel, B.C. 925, was the capital of the ten tribes till they were carried away by Shalmanesar, B.C. 720: here was planted the first Christian Church out of Jerusalem: it fell into decay about the 4th century of our era, and is now a mere village surrounded by gardens and plantations. *Nablous* or *Nâbulus*, the ancient Shechem and Neapolis, the capital of the Kingdom of Israel before Samaria, and the chief seat of the Samaritan worship till the nation embraced Christianity: the inhabitants, who are chiefly Mohammedans, are engaged in the manufacture of soap and cotton fabrics. *Gaza* (Arab. *Guzzeh*) a thriving town on the S.W. coast, with manufactures of soap and cotton fabrics, and a principal entrepôt for the caravans passing between Egypt and Syria: it is very ancient—was one of the five chief cities of the Philistines; the scene of some of Samson's famous exploits, and of his death; and near it Philip baptized the eunuch of Ethiopia. *Jaffa* or *Yaffa*, anc. Joppa, a maritime town 45 miles N.W. of Jerusalem: it has a trade in cloth, corn, fruits, and coral, the produce of its vicinity; and here the pilgrims usually land on their way to Jerusalem: it is celebrated as the place where Jonah embarked for Tarshish, and where Peter had his deeply significant vision.

Damascus (Arab. *Es-Sham*) the principal city in Syria, in a beautiful plain at the eastern foot of Anti-Lebanon: it is regarded by many as the most ancient city in the world, and it is certainly one of the earliest that attained to consequence: situated at the edge of the desert, and at the mouth of the plain of Cœle-Syria, it was destined to be one of the greatest emporia of commerce in the world: at its immense bazaars may always be seen the representatives of all civilised nations, and above 200 merchants are here permanently settled: foreign trade is carried on by the great caravan to Mecca, and by those to Bagdad and Aleppo; while there is daily communication with Beirut, Tripoli, and Acre. *Hamah*, the Hamath of Scripture and the Epiphania of the Greeks, 110 miles N.E. of Damascus, was an early colony of the Phœnicians, and, in the days of Joshua, the capital of a small kingdom of same name: in the 14th century of our era Abulfeda, the Arabian geographer, was its prince; and it is at present one of the most pleasant towns of Syria, carrying on a brisk trade with the Arabs of the desert, and having manufactures of silk, cotton, and woollen stuffs. *Hems* or *Homs* (Emesa), 86 miles N.E. of Damascus, was anciently the capital of Phœnicia Libania, and in Strabo's time the residence of independent Arabian princes: it was celebrated for its great temple of the sun, the high priest of which (Elagabalus) exchanged his office for the imperial purple: it was also the scene of a decisive battle between Aurelian and the famous Queen Zenobia, A.D. 273. *Palmyra*, the Tadmor of Scripture, built by King Solomon in an oasis in the Syrian Desert, 120 miles N.E. of Damascus, and midway between the Euphrates and the Mediterranean: as a principal station for the great caravan traffic from the East, it was pre-eminently a city of merchants, who sold to the western world the products of India and Arabia: Zenobia, its ambitious queen, was vanquished and carried to Rome by Aurelian, and her splendid capital levelled with the ground: a few mud cottages mark the spot where "the city of palms" once stood; but the surrounding ruins, which cover a space of three square miles, are the admiration of all travellers through the desert: neither Greece nor Italy can exhibit antiquities which in point of splendour can rival those of Palmyra: the most remarkable of these remains consist of portions of a temple of the sun, which had 390 Corinthian columns of white marble, 60 of which are still entire. *Jerusalem* ("peaceful possession"), contracted into Salem, by far the most interesting and renowned city in the world, having been the site of the most important events recorded in the annals of history: the date of its origin is wholly unknown, but it existed in the time of Abraham, when Melchizadek was its sovereign: it was the capital of the Israelitish empire under David and Solomon, when it became the permanent centre of the true religion: after the division of the empire under Rehoboam it remained the capital of the kingdom of Judah, till the time of the captivity, B.C. 588: here the Saviour taught, here he wrought miracles, and here he suffered: after having been the scene of horrors unparalleled in the history of the human race, Jerusalem was abandoned to the Romans, who levelled it to the ground, A.D. 70: it was re-built by Hadrian, A.D. 135; captured by the Persians in 614; by the Saracens, under Omar, in 637; by the Crusaders, under Godfrey of Bouillon, in 1099; re-captured by Saladin in 1187; and has ever since remained under the galling yoke of the Turks: the principal buildings are the Mosque of Omar, on the site of the Temple of Jehovah, and overlooking the deep valley of Jehoshaphat; and the Church of the Holy Sepulchre, which is supposed to mark the sacred spot where the crucifixion, burial, and resurrection of our Lord took place. *Hebron*, more recently Kirjath-Arba and Mamre, now called *El Khulil* by the Arabs, stands on a height, 18 miles S. of Jerusalem: it is perhaps the oldest city in the world that is still inhabited, having been built "seven years before Zoan in Egypt," which was itself a town of venerable antiquity in the days of Moses: with the exception of Jerusalem and Bethlehem, perhaps no place on earth is more hallowed by high and sacred associations: the reputed site of the cave of Machpelah, the sepulchre of the patriarchs, is covered by a Turkish mosque, which no Jew or Christian is permitted to enter. *Bethlehem* or *Ephrath*, now Beit-el-lahm, 6 miles S. of Jerusalem, on the road to Hebron, possesses everlasting renown from having been the birthplace of our Saviour, as it had previously been of David, his great ancestor according to the flesh.

MESOPOTAMIA.—*Bagdad* or *Baghdad*, capital of a pashalick of same name, and formerly of the Saracen Caliphate, on both sides of the Tigris, 220 miles from the Persian Gulf: it is a place of great trade, especially with Aleppo and Damascus: it was long the great emporium of all the surrounding countries, but its commerce has declined since Persia began to receive European goods by Trebizond and the Persian Gulf. About 20 miles further down the river stood the ancient Ctesiphon and Seleucia, the former the capital of the Parthian Empire, and probably the Calneh of Gen. x. 10, and the latter the mighty capital of Western Asia, till it was eclipsed by Ctesiphon. Close to Bagdad, and farther up the Tigris, stood Sittăce, probably the Accad of Scripture, a great and populous city, supposed to be now marked by the ruin called Tel Nimroud. *Bassorah* or *Basra*, the great emporium of the Turkish Empire for Eastern produce: ships of 400 tons can come up to the city. *Hillah*, a small town on the Euphrates, 60 miles S. of Bagdad, among the ruins of ancient Babylon, the first theatre of empire, and one of the most magnificent and famous cities of the ancient world: it was built by Nimrod, grandson of Ham, and became afterwards the luxuriant capital of the Babylonish-Chaldean Empire: it was in the zenith of its power in the time of Nebuchadnezzar, B.C. 604; was taken by Cyrus, B.C. 538; and afterwards by Alexander the Great: after his death it became a part of the Syrian kingdom of Seleucus Nicator, who contributed to its decline by the foundation of Seleucia. *Diyarbekr* or *Diarbekr*, represents the ancient Amida: here are some copper works and manufactures of cotton and silk. *Harran*, the Haran of Scripture, where Abraham and his family resided for a time on their journey towards Canaan, and where Crassus was defeated by the Parthians, B.C. 53. *Orfah*, the famous Ur of the Chaldees, the birthplace of Abraham, Nahor, and Lot; and afterwards Edessa, capital of Osrhoëne, where Caracalla was murdered. *Mosul*, on the Tigris, 215 miles N.W. of Bagdad, a considerable town with a brisk and flourishing trade, but chiefly interesting on account of its proximity to the ruins of ancient Nineveh, recently explored with such brilliant results by M. Botta, and by our indefatigable countryman, Layard: their excavations have brought to light the sculptured remains of several immense palaces of the ancient kings of Nineveh: the mounds containing these remains are spread over a large area along the east bank of the Tigris, and include Khorsabad, Kouyunjik, Nimroud, and Karamlis: the prophet Jonah and the historian Diodorus inform us that in their time Nineveh was three days' journey in circumference, and that it had a population of about 600,000 souls: the numerous remains brought to light by Layard, most of which are deposited in the British Museum, clearly belong to different periods, extending over several generations, none of which can be later than 600 B.C., while some of them belong to a period at least as ancient as the 13th or even the 15th century before our era. *Arbel* or *Erbil*, the ancient Arbela, where Alexander the Great obtained his final and decisive victory over Darius, B.C. 331.

Capes.—Injeh, the northmost point of Asia Minor; Baba, the westmost point; Krio, the most south-westerly point; Anamur, the most southerly point of Asia Minor.

Islands.—Marmora, in the Sea of Marmora; Lesbos or Mitylene, Scio or Chio, Samos, Nicaria, Patmos, Cos or Stanchio, Rhodes—all off the west coast of Anatolia; Cyprus, in the Mediterranean, south-east of Asia Minor.

Many of these islands are highly celebrated: *Marmora* is noted for its quarries of beautiful limestone, and hence the term *marble*. *Lesbos* was famous for its excellent wine, and for being the birthplace of Alcæus, Sappho, Arion, Pittacus, Theophrastus, and the pirate Barbarossa; area 276 square miles, population 40,000; principal town Castro. *Scio* (Chios), a beautiful fertile island, which enjoyed great prosperity till 1822, when, having united with Samos in its revolt against the Turks, almost the entire population, amounting to about 120,000 persons, were either massacred or sold into slavery. *Samos* was one of the chief centres of Ionian civilisation, literature, and art: its pottery was celebrated over the world; statuary, painting, and architecture long flourished in it; but it is chiefly celebrated as having been the birthplace of Pythagoras. *Patmos* will be ever memorable as the scene of the Apostle John's banishment, and as the place where the volume of inspiration was completed. *Cos*, the birthplace of Hippocrates and Apelles, contained a celebrated temple to the god Æsculapius. *Rhodes*, the most easterly island in the Agean Sea, and one of the largest in the whole Archipelago—area 420 square miles, population 30,000—is well watered and fertile, and celebrated from the remotest antiquity as the seat of commerce, navigation, literature, and the arts; but now reduced to a state of abject poverty by the devastations of war and the tyranny and rapacity of its Turkish rulers: its capital, Rhodes, with a population of 15,000, was in ancient times famous for its huge brazen statue of Apollo, reckoned one of the seven wonders of the world: in modern times Rhodes is noted as one of the last retreats of the knights of St John of Jerusalem, who held it from 1308 to 1522. *Cyprus* (Heb. *Chittim*? Turk. *Kebris*), a large and celebrated island of the Mediterranean, south of Cilicia, area 4500 square miles, population 108,000, of whom 75,000 are Greeks and 30,000 Turks: the surface, in many parts sterile and uninhabited, is traversed from east to west by two mountain ranges, which attain their maximum height in Mount Santa Croce (*Olympus*), 8000 feet above the level of the sea; capital *Lefkosia* 12, near the centre: other towns are—*Larnica* 3, the best frequented port on the island; and *Famagusta* (Arsinoe), once the capital of the island, with the ruins of Salamis in the vicinity.

Seas, Straits, and Gulfs.—Black Sea, N. of Asia Minor; Bosporus, Sea of Marmora, and the Hellespont, between European and Asiatic Turkey; Gulfs of Adramyti, Smyrna, Scala Nova, and Cos, W. of Anatolia; Gulfs of Makri, Adalia, and Scanderoon, S. of Asia Minor; the Levant, W. of Syria; the Persian Gulf, S.E. of Mesopotamia.

Mountain System.—(See under "Asia," par. 11.)

River System and Towns.—(See after "Beloochistan.")

Lakes.—Van (*Arsissa Palus*), in the S. of Armenia; Isnic (*Ascania*), Abullionte (*Apolloniatis*), and Maniyas (*Miletopolitis*), in the N.W. of Anatolia; Egerdir, in the S.E. of Anatolia; Tuz-gol or Koch Hissar (*Tatta*), in N. of Konieh; Agh Dengiz, N.E. of Antioch; Bahr-el-Merdj, near Damascus; Bahr-el-Huleh (*Waters of Merom*), near the sources of the Jordan; Lake of Tiberias, E. of Galilee; Dead Sea (*Asphaltites*), S.E. of Palestine.

Most of these lakes are salt, and have no outlet. *Lake Van*, the largest, has an area of 1200 square miles; elevation above the sea, 5467 feet; its waters are salt; it contains many islands, and the only fishery in it is that of a kind of Sardines, which are salted, and exported to all parts of Asia Minor: pumice-stone and other volcanic products lie scattered along the shores. The *Lake of Tiberias*, or Sea of Galilee, is the most interesting sheet of water in the world, from having been so often navigated by the Saviour and the fishermen of Galilee whom he chose to be his Apostles: here he walked on the billows, and here he stilled the winds and the waves; while on its western shore stood most of the towns which he frequented during his ministry—as Tiberias, Bethsaida, Chorazin, and Capernaum: the lake is traversed by the Jordan from N. to S.; the waters are fresh and teem with fish; and it has now been ascertained that its surface is 328 feet below the level of the Mediterranean. The *Dead Sea* or Lake Asphaltites—area 360 square miles—is also very remarkable, as being the saltest body of water known; as having no outlet, though it receives the drainage of a large extent of country; and as occupying the spot where once stood the guilty cities of the plain, Sodom, Gomorrha, Admah, and Zeboim: the waters are so intensely salt that no living creature can live in them, and so buoyant that men bathing in them find themselves floated like cork: as its surface is 1312 feet below the level of the ocean, it is obvious that, even before the destruction of Sodom, the Jordan could not have found its way to the Red Sea, unless indeed that catastrophe was accompanied by a general change of level over the entire country: the probability, therefore, is that there was a smaller lake here previously.

Climate, cold and humid in the mountainous regions, but warm and delightful in the plains and valleys. In the valley of the Jordan, especially in the vicinity of the Dead Sea, the heat of summer is excessive, as also in the southern portion of Mesopotamia. In Palestine and along the Syrian coast, rain falls at intervals from the middle of September to the end of April. During the dry season the sky is uniformly clear, and the night-dews heavy. The mean annual temperature at Jerusalem is 62°·6, summer, 73°·8, and winter, 49°·6. The peaks of Mount Ararat are covered with perpetual snow, as also the loftiest summits of the Lebanon range.

Minerals.—All the useful metals are found in the mountain ranges. In Armenia, copper, lead, and alum occur, and some silver mines are wrought; rock-salt is found in considerable quantities, and mineral waters abound. In Asia Minor, copper, silver, lead, alum, nitre, and rock-salt. In Syria, iron, coal, and limestone. Palestine is, in general, of trap-formation, with volcanic rocks in several localities, as the valley of the Dead Sea. Oolitic limestone (containing numerous caverns) and indurated chalk prevail west of the Jordan.

Botany.—The whole of Asiatic Turkey, with the exception of Mesopotamia and Kourdistan, is included within Schouw's third phyto-geographic Region, otherwise called the Mediterranean Region, the characteristic vegetation of which is noticed under "Europe," par. 18. The flora of Armenia is said to resemble that of the Tyrol and Switzerland. That of Asia Minor, especially the west and south of Anatolia, is extremely beautiful, and will bear comparison with the vegetation of Sicily and Spain. In Syria, the olive, fig, citron, orange, pomegranate, and vine, are especially luxuriant in the lower grounds; while natural groves of sycamore, mulberry trees, evergreen oaks, cypresses, and cedars, clothe the uplands. Palestine was that "good land" which God chose for His people, and is celebrated as "a land of wheat and barley, of vines and fig-trees and pomegranates, a land of oil and honey." Mesopotamia is celebrated for its dates, which form an important article of subsistence; and large crops of wheat, barley, rice, and maize, with tobacco, hemp, flax, and cotton, are produced.

Zoology.—The native zoology of Asiatic Turkey does not present any remarkable species that are not equally found in the adjacent extremities of Africa and Asia. It forms, together with Persia, the *Transition Province* of the second zoological kingdom of modern naturalists. (See under "Asia," par. 20.) The lion, once so common, has wholly disappeared in the countries west of the Euphrates. In Mesopotamia occur the striped hyena, lynx, panther, buffalo, and wild boar; while jackals, bears, wolves, and wild hogs, are met with in Asia Minor. The leopard is still found in the interior of Palestine; the Syrian bear in Lebanon; the hedgehog, hare, mole, wolf, in numerous localities. The domestic animals comprise the camel, dromedary, horse, ass, ox, sheep, and goats. The goats of Angora are celebrated for the fineness of their hair.

Ethnography.—Three distinct races of people are found in Asiatic

Turkey—viz., the Turkish, Shemitic, and Caucasian. The *Turkish* race includes the Osmanlee, who form 9-10ths of the population of Asia Minor, and the Turcomans, who are very numerous in Mesopotamia and the north of Syria. Both these tribes speak the Turkish language, and profess the Mohammedan faith. To the *Shemitic* race belong the stationary Arabs, who constitute the majority in Syria, Palestine, and Mesopotamia; and the Bedouins, or Wandering Arabs, of the Syrian Desert: these speak the Arabic language, and are followers of Mohammed. The Druses, Maronites, and Metualis, in Lebanon and Cœle-Syria, are also regarded as of Shemitic origin, together with the Nestorians in the highlands of Kourdistan and Mesopotamia, who are Christians, and speak the Modern Syriac; and, lastly, the Jews, who, to the number of 175,000, are scattered over Syria, Palestine, and other provinces. The *Caucasian* race comprehends the Greeks, who form a large fraction of the population of Syria, Palestine, and Asia Minor, and belong to the Greek Church: the Armenians, who constitute about 1-7th of the population of Armenia, speak the Armenian language, which is radically connected with the Persian, and profess a corrupt form of Christianity; the Kourds, who are generally Mohammedans, with a language resembling Modern Persic; and the Yezidees or Devil-worshippers, in the north of Mesopotamia.

ARABIA.

Boundaries.—N., Turkey in Asia; W., the Red Sea; S. and S.E., the Gulf of Aden and the Arabian Sea; E., the Gulf of Oman and the Persian Gulf. Lat. 12° 40′—35° N.; long. 32° 30′—60° E. MECCA (in lat. 21° 38′), its most celebrated city, and often regarded as the capital, is only 2° S. of the tropic of Cancer, which divides Arabia into two nearly equal parts. Other important cities on the same parallel of latitude with Mecca are, Mazatlan, Tampico, Havanna, Cape Blanco in Western Africa, Surat, Nagpoor, Aracan, and Tonquin; while Jaroslav, Tcherkask, Medina, and Mozambique, are on the same meridian.

Area and Population.—The area is estimated at 1,200,000 square miles, and the population at 8,000,000. Arabia has, therefore, ten times the area of the British Isles, but only one-third of their population. The extreme length, from Suez to Ras-al-Had, is 1800 miles; and the extreme breadth, from the Strait of Babelmandeb to Cape Mussendom, nearly 1200 miles.

Surface and Mountains.—This immense peninsula, the *Jeziret-el-Arab* of the natives, and *Arabistan* of the Turks and Persians, consists for the most part of a huge plateau, which attains in some places the height of 8000 feet. A great mountain-chain, prolonged from the Syrian Lebanon, extends along the entire W. coast to the Strait of Babelmandeb; and another, nearly at right-angles with it, skirts the S. coast to the province of Oman: here the Jebel-Akhdar, the culminating point of this chain, attains the elevation of

5000 feet. The coasts are generally low, but very fertile where water is abundant; but the whole country lying between Hedjaz and the Euphrates is a continuous plain of moving sands. A similar region occupies much of the southern half of the peninsula. There are no rivers, properly so called, in Arabia; but springs partly supply the deficiency, and impart to the oases around them a surprising degree of fertility.

Political Divisions.—Ptolemy divided the country into Arabia Petræa, in the N.W.; Arabia Felix, in the W. and S.; and Arabia Deserta, embracing all the remainder; but this partition is unknown to the inhabitants, who recognise only the following seven divisions:—

Arabia Petræa.*—Tor (Gulf of Suez), Akaba (Gulf of Akaba), *Ruins of Petra* (Wady Mousa).

Hedjaz.—Mecca, 60 n., Yambo 7, Jiddah 22 (Red Sea), Tima, Hedjar, Khaibar, Medina 8, Tayf, all in the interior; Konfodeh or Gomfodeh, Hali (S.W. coast).

Yemen.—Sana 40, Damar 25, Taas 10 (in the interior); Loheia 5, Hodeida, Beit-el-Fakih 8 n., Zebid 7 n., Mocha 7 (Red Sea), Aden 40 (Gulf of Aden).

Hadramaut.—Makalla 5, Shahr 6, Kisseen or Keshin (S. coast).

Oman.—Muscat 40, Muttra 20, Sohar 9 (Gulf of Oman), Rostak, Minna, Nizzuwah (in the interior).

Lachsa.—Lachsa or Fouf 15 (Aftan), Ras-el-Khyma, El Katif 6, Grane or Kúeit 10 (Persian Gulf), Manama 5 (I. Bahrein).

Nedjed.—Deraieh 15 n. (Aftan), Anezeh, El Ras (N.W. of Deraieh).

Descriptive Notes.—*Tor* or *Túr*, a small town on the caravan route from Egypt to Mecca, where the water is better than at any other place on the Red Sea. A few miles inland is Jebel-at-Túr, the Mount Horeb of the Old Testament. *Akaba*, or "the descent," a small town, built for the protection of the pilgrim caravans from Cairo to Mecca. Near it, in ancient times, stood *Elath* or *Ailah*, mentioned as a station on the Israelitish route to Canaan, and *Ezion-Gebar*, famous as the port where Solomon and Jehoshaphat built fleets to carry on a commerce with Ophir. Half-way between Akaba and the Dead Sea are the famous ruins of *Petra* (the Selah and Joktheel of the Old Testament), the ancient capital of Idumea, and afterwards of the Nabatheans, surrounded by almost inaccessible precipices, and entered by a single narrow gorge. It was a city of great extent and magnificence, and commanded a large share of the traffic of the East. Some fine ruins of its public buildings still remain. *Mecca*, capital of the Hedjaz, and the most celebrated city of Arabia, is famous as having been the birthplace of the arch-impostor Mohammed (A.D. 571), and the cradle of the Mussulman religion. Here stands the Beitulah or "house of God," the grand centre of the Mohammedan world, containing the Kaaba or sanctuary, an oblong massive structure of rough stone, alleged to have been built by Abraham, and the object of their deepest veneration. Mohammedans only are allowed to enter Mecca, and all persons of that faith are required to make a pilgrimage hither at least once in their lives. *Jiddah*, the port of Mecca, is the principal commercial entrepôt of Arabia. *Medina*, a celebrated city, 245 miles N. of Mecca, was the seat of Mohammed's empire; hither he fled from Mecca in A.D. 622, and that year, termed the Hegira or "Flight," has ever since formed the great era in all parts of the Mohammedan world. Medina contains the Prophet's tomb. *Sana* is a flourishing town, and carries on a great trade in coffee with Persia, India, and Turkey. *Mocha*, a fortified seaport, is chiefly celebrated for its coffee, the finest in the world: about 10,000 tons of coffee are exported annually, besides considerable quantities of dates, gums, senna, balm, ivory, and gold-dust. *Aden*, a strongly-fortified seaport, belonging to Britain, and expected ere long to become the Gibraltar of the East. *Makallah*, with a good harbour, affords supplies to ships on their way to India. *Muscat*, a fortified maritime city, capital of the dominions of the Imam of Muscat, is the grand commercial emporium of Eastern Arabia. *Muttra*, a large town, with shipbuilding docks. *Sohar* has considerable trade in fruits. *Lachsa* is well watered, and surrounded by plantations of date trees. *Deraieh*, formerly capital of the country of the Wahabees or Mohammedan reformers, was nearly ruined by the troops of Ibrahim Pacha in 1809. *Anezeh*, at the junction of several caravan routes, is a place of great commercial importance.

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* So named, not because it is more *stony* than the rest of Arabia, but from the now deserted *Petra*, which was hewn out of a rock.

Capes, Islands, and Gulfs.—See under "Asia," pars. 8, 9, 10.

Climate.—The climate is generally hot, and the driest in the world. In summer the heat is intense along the Red Sea and the Persian Gulf, Mecca being one of the hottest places on the globe, having a mean annual temperature of 68°, while that of July is 90° Fahr. In the elevated interior, however, the temperature is more moderate. The rainy season lasts from the middle of June to the end of September. During the intense summer-heat, the hot wind of the desert, called the simoom or samiel, blows from the interior in all directions.

Minerals.—These are little known, but comprise the onyx, emerald, blue alabaster, granite, limestone, basalt and other volcanic productions; iron in Yemen; silver and lead in Oman; rock-salt near Loheia and in several other localities.

Botany.—The S.W. angle of Arabia comprises Schouw's "Region of Balsamic Trees." Here the vegetation is tropical, the greater part consisting of Indian forms. There are many trees yielding gums and balsamic resins; and the cultivated plants are maize, millet, date-palm, cocoa-nut, fig, apricot, peach, plum, apple, quince, vine, coffee-tree, tamarind, sugar-cane, ginger, cotton, and indigo. The entire remainder of the country belongs to the same author's "Desert Region." Here the flora is very poor, and cultivation is confined to the oases, where the date-tree comes to perfection. Doura, wheat, and barley are the principal cultivated plants, together with certain Indian and S. European fruits.

Zoology.—Wild animals are few in number, on account of the scarcity of wood and water. The principal beasts of prey are the panther, ounce, and hyena. Apes are numerous in Yemen. The wild ass of the desert is noted for its size and strength. The ibex inhabits the rocky heights, the antelope the plains, and the jerboa and lizard the barren sands. Among domestic animals the camel of Oman is celebrated for its beauty, and the dromedary is a useful beast of burden. The horse, which has been carefully bred for several thousand years, forms an important branch of traffic.

Ethnography.—The people of Arabia are a very mixed race, being partly descended from Ham and partly from Shem, the sons of Noah. Ham's eldest son was Cush, and the Cushites appear to have been the earliest inhabitants of Southern Arabia, from which they sent out colonies across the Red Sea, and peopled Ethiopia (Abyssinia). The descendants of Shem are principally the Joktanites, or Kachtanites, who, according to the Arabian geographers, settled in Yemen soon after the confusion of tongues; the Ishmaelites, who settled E. and S.E. of Palestine; the Midianites and Amalekites, who in Moses' time occupied the peninsula of Sinai; the Edomites and Nabatheans, who peopled Idumea, and had Petra for their capital; the Nahorites, who dwelt in the "land of Uz;" the Moabites and Ammonites, who occupied the territory E. and N.E. of the Dead Sea. These and many others, whose precise localities cannot now be determined, came in the course of ages to be thoroughly amalgamated, and to be known under the general designation of Arabs—a people whose physical and mental characteristics are very strongly and decidedly marked. In physical conformation the Arab ranks so high, that by many he is regarded as furnishing the prototype or model form of the human species. (See p. 454.)

Language.—The Arabic language, so remarkable for its copiousness and beauty, is the most important representative of the great Shemitic family of tongues (see "Asia," par. 21). Its roots are in general identical with those of the Hebrew; and its inflections, though greatly more varied and numerous, bear to that language the closest affinity. It is the vernacular language not only of Arabia, but also of Syria, Mesopotamia, Egypt, Nubia, the Barbary States, part of Persia, and some places on the Malabar and Coromandel coasts. It is also extensively used as the language of religion and commerce wherever the Mohammedan faith prevails; and in it is written the Koran, the sacred book of the whole Mohammedan world.

Religion.—Ever since the time of Mohammed, Islamism has been the only religion known in Arabia. It has completely extirpated the Sabaism and Judaism which had previously been the prevailing forms of worship.

Government.—The Hedjaz is nominally subject to Turkey, and the province of Oman to the Imam of Muscat, who maintains a military force of 20,000 men. The rest of the country is shared among an uncertain number of petty states. The government of the Bedouins is strictly patriarchal in each of the numerous tribes, the chief power in each tribe being vested in a chief or *sheikh*, whose office is hereditary, but who may be deposed by an ambitious kinsman if, by tyranny or incapacity, he should become unpopular.

Manufactures and Commerce.—The former are at a lower ebb than in any other semi-civilised country. The leading object of industry is the raising of camels, horses, goats, sheep, &c.; but the women weave hair tent-covers and bags. In Oman are made silk and cotton turbans, sashes, woollen and hair cloaks, canvass, arms, earthen jars, and gunpowder. In the western and southern provinces, coarse linens, woollen fabrics, rude matchlocks and other arms, are manufactured chiefly by foreigners. The pearl fishery of the island Bahrein, on the coast of Lachsa, is perhaps the most extensive and valuable in the world, employing 1500 vessels, from 2000 to 3000 boats, and yielding annually pearls to the value of about £150,000. The transit trade of Arabia, though greatly inferior to what it was in ancient times, is still considerable; and large quantities of merchandise are brought by caravans and by sea from the surrounding countries, partly for home consumption, and partly for sale to the numerous pilgrims who resort annually to Mecca and Medina.

PERSIA.

Boundaries.—N., Independent Tartary, the Caspian Sea, and Transcaucasia; W., Asiatic Turkey; S., Persian Gulf and Arabian Sea; E., Beloochistan and Afghanistan. Lat. 26°-40° N.; long. 44°-61° E. Ispahan, the former capital, near the centre of the kingdom, is in the same latitude as the Bermudas, Madeira, Tripoli, Acre, Amritsir, and Nankin.

Area and Population.—The area is estimated at 450,000 square miles, and the population at 10,000,000. Persia is therefore five times the size of Great Britain, with only half its population.

Surface.—The central portion is an elevated plateau, about 3000 feet high, and is traversed by mountain-ranges which in many places attain to the height of 7000 or 8000 feet. The Paropamisan and Elburz ranges form its N. frontier, while the S.W. and S. are formed by a chain extending from the mountains of Kourdistan to those of Beloochistan (see under "Asia," par. 11). Many fertile tracts exist in the W. portion of this elevated region, but nearly all Eastern Persia is an irreclaimable salt desert, forming a part of that rainless and sterile zone which extends from the great African desert to the frontiers of the Chinese empire.

Political Divisions.—These vary in number and magnitude, but usually comprise the following:—

Astrabad.—Astrabad 20 (Caspian).

Mazanderan.—Saree 15, Balfrush 60 n., Amol 40 n. (Caspian).

Ghilan.—Resht 20 n., Lahijan 15, Enzeli 3 (Caspian).

Azerbijan.—Tabriz 80 (Aji), Urumiah 25 n., Maragah 15 n. (L. Urumiah), Dilman 15, Selmast 7 (N.W. Lake Urumiah), Khoi 30 (Kotura, *affl.* Kur), Ardabil 3 (Lara, *affl.* Aras).

Persian Kourdistan.—Kermandshah 30, Senna 25 (*affl.* Kizil Ouzan).

Luristan.—Korumabad 5 (Koon, *affl.* Kerkhah).

Khuzistan.—Shuster 8 (Karun), Dizful 15 (Dizful), Haweeza, Shus or Susa (Kerkhah), Dorak 6 (Jerahi).

Fars or **Farsistan.**—Shiraz 30 (Rocknabad), Istakhar (Bundamir), Murghab (Kurab), Fasa 18, Darabjerd 20 (S.E. Shiraz), Feruzabad n. (Nabon), Kazerun 5 (Khisht), Bushire 20, Cogoon 6, Leur (Persian Gulf).

Laristan.—Lar 12 (180 miles S.E. Shiraz), Forg (S.E. Shiraz), Taurie, Nackiloo (Persian Gulf).

Kerman.—Kerman 30 (125 miles E. Lake Bakhtegan), Bumm, Jumalee, Neheemabad, Krook (S.E. Kerman), Gombroon, Sereek, Jask (S. coast).

Yezd.—Yezd 50 (140 miles N. Kerman), Khubees, Neh (E. Yezd).

Khorassan.—Meshed 50 (Tejend), Nishapoor 8 (W. of Meshed), Tursheez, Tubbus (in the desert), Koochan or Kabooshan 15 (Attruck).

Irak-Ajemi.—TEHERAN 100 (S. of Mt. Elburz), Kasbin 40 n. (Kizil-Ouzan), Zenjan 15, Sultania (Zenjan), Hamadan 40 n. (Mt. Elwund), Nehavend (Koon), Ispahan 165 (Zendarood), Khonsur 12 (N.W. Ispahan), Sava 8, Kashan 30, Koom 8 (S.W. Teheran).

Descriptive Notes.—*Astrabad*, though admirably situated for commerce, has very little trade; it is so unhealthy as to be generally called "the city of the plague." *Saree* was nearly depopulated by the cholera in 1830. *Balfrush* contains numerous bazaars and caravanserais, and has a large general trade. *Resht*, a well built town, with extensive bazaars, carries on a considerable trade with Russia. *Tabriz*, surrounded by magnificent gardens, is the entrepôt of the trade between Persia, Russia, India, Constantinople, and the Black Sea. *Urumiah* claims to be the birthplace of Zoroaster; in its vicinity are several mounds, supposed to have been erected by the ancient fire-worshippers. *Maragah*, noted for the cave-temples in its vicinity, and for its white marble, which, when cut thin, is capable of being employed as a substitute for window-glass. *Khoi*, one of the finest towns in Persia; here Shah Ismael totally defeated the Turks in 1514. *Kermandshah*, a flourishing town, with manufactures of carpets, swords, and muskets. *Senna*, a romantic, flourishing town, in a deep, secluded valley, which is filled with orchards. *Korumabad;* here the inhabitants live in tents instead of houses all the year round. *Shuster* was nearly depopulated by the plague in 1832. *Shus* (Susa), probably the Shushan of the Book of Daniel, is said to contain the bones of that prophet: here Alexander and his generals celebrated their nuptials with the Persian princesses, B.C. 325: in the extensive ruins around are found bricks and pottery with cuneiform inscriptions. *Shiraz*, at one time the capital of Persia, possesses several manufactures, and an extensive trade in salt, obtained from the neighbouring lake: it is the birthplace of the famous poets Saadi and Hafiz. *Istakhar*, now *Taghti-Jemashid*, occupies part of the site of the famous Persepolis, the ancient capital of the Persian empire: here Alexander the Great found immense riches on his journey eastward, B.C. 331, and at the end of a revel set fire to the palace with his own hand: numerous tombs, cut out of the solid rock, are found in the adjoining mountains, and the ruins of the city are rich with inscriptions in the arrow-headed character. *Murghab* (Pasargadæ); here Cyrus the Great gained his decisive victory over Astyages, B.C. 559: the ruins contain numerous ancient remains, among which is the tomb of Cyrus. *Bushire*, more properly *Abu-Shehr* ("father of cities"), is the principal seaport of Persia on the Persian Gulf, and maintains an extensive trade with British India. *Lar*, formerly capital of an Arabian kingdom, has manufactures of arms, gunpowder, and cotton fabrics, and the finest bazaar in Persia. *Nackiloo*, a small town, busily engaged in the pearl-fishery. *Kerman* or *Serjan*, carries on a trade in wool, which is celebrated for its fineness. *Gombroon* or *Bunder-Abbas*, together with *Sereek* and *Jask*, form a part of the dominions of the Imam of Muscat. *Yezd*, a fortified city, contains spacious bazaars, and has manufactures of silk, cotton, and woollen goods: it is the only place in Persia in which the Parsees, Guebres, or Fire-worshippers, are numerous. *Meshed* or *Mushed*, in a fertile plain, enclosed by strong walls, maintains an active trade with Bokhara, Herat, and other places. Here is a magnificent mausoleum of Imam Reza, and of the celebrated Haroun-al-Raschid, caliph of Bagdad, whose reign was the Augustan era of the Arabian dominions. He was contemporary with Charlemagne, and died in 809. *Nishapoor*, celebrated for its turquoises, obtained from mines in the vicinity. The turquoise, or calaite, is a beautiful sky-blue gem, the principal ingredients of which are alumina and phosphoric acid. It was long considered as peculiar to Persia, but has recently been discovered in Bucharia, the Syrian desert, and Germany. TEHERAN or TEHRAN, superseded Ispahan as the capital of Persia in 1770. It is situated on a low site, in an angle of the Elburz Mountains, 70 miles S of the Caspian. It consists of splendid edifices and magnificent gardens, intermingled with wretched mud-built huts. In summer the heat is so intense, that the Shah, and all who have the means, desert the city, and encamp on the plain of Sultania, about 150 miles to the N.W. of it. Its vicinity is fertile and covered with villages, and it has manufactures of carpets and iron goods. About twenty-five miles E of Teheran are the extensive ruins of *Rhagae*, the capital of the Parthian kings, and the most important city in Media, the contemporary of Nineveh and Ecbatana, and the birthplace of Haroun-al-Raschid. In the middle ages it was still a great city—

its original name being altered into *Rai*—and was finally destroyed by the Tartars in the twelfth century. *Kasbin* or *Casween*, a large, fortified, and commercial city, 90 miles N.W. of Teheran, celebrated for its grapes and pistachio nuts, and for its extensive transit trade. *Hamadan*, the ancient Ecbatana, at one time the capital of the Median kingdom, and afterwards the summer residence of the Persian and Parthian kings. It is the Achmatha of the Book of Ezra, and contains the reputed sepulchre of Esther and Mordecai. Hamadan is the entrepôt for the commerce between Baghdad and Teheran. *Ispahan* (Aspadana), the most important and populous city in Persia, of which it was formerly the capital. Under Shah Abbas the Great, who died in 1627, it was one of the richest and most populous cities in Asia; but during the Afghan invasion in the eighteenth century, its walls were destroyed, and the city reduced to a state of decay. It now presents a melancholy spectacle of deserted halls, ruined houses, and neglected gardens. It has numerous manufactures of woven fabrics, gold and silver wares, firearms, sword-blades, glass, earthenware, &c., which are exported to Baghdad, Herat, India, and most parts of Western Asia. *Kashan*, a large town with a royal palace, numerous mosques, colleges, bazaars, and public baths, has an active trade in agricultural produce, and numerous manufactures.

Islands.—Karak, N.W. of Bushire; Kishm or Kishma, and Ormuz, at the entrance of the Persian Gulf; with several smaller islands S. of the province Laristan.

Karak or *Karedj* alone belongs to Persia, the others being subject to the Imam of Muscat. Karak is of coral formation, is very fertile, and has a pearl-fishery on its N. coast. *Kishm*, the ancient *Oaracta*, is the largest island in the Persian Gulf; is 70 miles long, with an average breadth of 12 miles; population 5000, who are chiefly Arabs. *Ormuz* or *Hormuz* (anc. *Ozyris* and *Organa*), is little more than a barren rock, but important as having been one of the richest commercial emporia in the East when in the possession of the Portuguese. On its N. coast is a town with a fort and a good harbour. This was once a splendid and populous city, but its trade is now transferred to Gombroon.

Seas, Bays, and Straits.—The Caspian Sea, forming a part of the N. frontier; Persian Gulf, between Persia and Arabia; Gulf of Oman, S. of Jask; Strait of Ormuz, between that island and Cape Mussendom, in Arabia; Clarence Strait, between the island Kishma and the mainland of Persia.

Mountains.—For the Elburz and Zagros ranges, see under "Asia," par. 11, and for the RIVER SYSTEM under "Beloochistan," p. 476.

Lakes.—Urumiah in Azerbijan; Bakhtegan and Mahluja in Fars.

Lake Urumiah, 85 miles long and 25 miles broad, with water intensely salt, and incapable of supporting any of the higher forms of animal life, is famous for its zoophytes. Lake Bakhtegan is 60 miles long, has an average breadth of 8 miles, receives the Bundamir river, and yields a large quantity of salt.

Climate.—The climate of Persia presents the greatest extremes of heat and cold. On the elevated table-lands of the interior the summers are excessively hot and dry, and the winters rigorously cold. Scarcely any rain falls, and trees refuse to grow, except near watercourses fed by springs. N. of the Elburz Mountains the climate is almost tropical; a dry and a rainy season regularly alternate; and vegetation presents a luxuriance not often seen in much lower latitudes. The district lying between the table-land and the Persian Gulf is burnt up in summer with a scorching heat. The scarcity of water is, indeed, the greatest disadvantage under which Persia lies.

Minerals.—Copper in the N. provinces; lead in Fars and Kerman; rock-salt, coal, iron, naphtha, in many places. The most celebrated minerals of Persia are the turquoise or calaite, found at Nishapoor, and the fine white marble of Maragah, so translucent as to be employed in windows.

Botany.—The interior is chiefly a desert, devoid of vegetation, except in the oases, where the date-tree attains unusual luxuriance. The principal forests are confined to the lowland region between the Caspian and the Elburz Mountains, where are found the oak, beech, elm, walnut, box, cypress, cedar, &c. Here also the orange, pomegranate, cotton plant, mulberry, sugar-cane, and vine come to perfection. The grains raised are rice, barley, and wheat; and the principal other products are tobacco, opium, assafœtida, gum-ammoniac, and other drugs, with madder, gall-nuts, &c.

Zoology.—Persia belongs zoologically to the Transition Province of continental Asia, a province which forms a connecting link between the three zoological kingdoms of the Old World (see p. 58). Among the wild animals are the lion, leopard, bear, panther, wild-boar, tiger-cat, lynx, hyena, wolf, jackal, porcupine, argali or mountain sheep, and the booz or mountain goat. Domestic animals include most of the species common in Europe, with the camel and argali sheep. The horses are very superior, and, with cattle and sheep, compose the principal wealth of the wandering tribes.

Ethnography.—The population is very mixed: that of the towns and settled districts is a race descended from Persians, Turks, Tartars, Georgians, Armenians, Arabs, and all the other nations who have at different periods held sway in the country. The Parsees, who appear to preserve more fully than the rest their purity of descent from the ancient Persians, are now nearly confined to the city of Yezd and some towns in Kerman. The nomadic tribes consist of Arabs in the S., Turcomans, Moguls, Uzbeks in the E. and N.E., and Kurds in the W. The settled tribes, who may be regarded as in general the descendants of the original inhabitants, are called Taujiks, and probably number about 7,000,000; while the wandering population are designated Ilyats or Eilauts, and do not exceed 2,500,000.

The *Languages* are as numerous as the races by whom the country is peopled, but those most predominant are the Persian and Turkish. The latter prevails in the northern and western provinces; but even here the natives are also acquainted with Persian, which is invariably the vernacular of the Taujiks in all parts of the country. The origin of the Persian dates from the invasion of the Arabs in the seventh century. Prior

while the Parsi, together with its polished court-dialect the Deri, was the language of Persia proper. But the primitive type of the whole group is undoubtedly the Zend, a language closely allied to the Sanscrit. The Persian is remarkable for its softness and harmony, which admirably adapt it for the lighter forms of poetry; and it contains numerous works both in literature and science. Of the numerous poets who have adorned the language, Firdúsí, Ansarí, Anwarí, and especially Saadí and Háfiz, natives of Shiraz, are the best known to Europeans. In the department of history it contains many works which would do honour to any age or people, as those of Mirkhond, Tabarí, Abu-Said-Abdullah, and Mohammed Kásim Ferishtá. The works on ethics, theology, and jurisprudence are very numerous, and those on grammar are of a superior order.

Religion.—The Taujiks are Mohammedans of the Sheah sect, who reject the authority of the first three caliphs. The Ilyats, on the contrary, are of the Sunnite sect; while the Parsees or Guebres are fire-worshippers.

The **Government** is despotic: the sovereign, who is called the *Shah*, is assisted by a grand-vizier, who exercises control over the military and foreign departments; and by a lord high treasurer, who superintends the revenue and home arrangements. The chiefs of the nomadic tribes, who are called Sheiks, are nearly independent. The annual *Revenue*, which is chiefly derived from land and capitation taxes, custom duties, tribute from wandering tribes, &c., has been estimated at about £2,000,000 sterling. The *Armed Force*, which is very variable in amount, has been recently estimated at 80,000 men, many of whom have received European discipline.

Manufactures and Commerce.—The principal manufactures are silk fabrics of all kinds; and in the principal cities, shawls of goats' hair, carpets, felts, cotton cloths, cutlery, and arms, glass, pottery, leather, and saddlery. The commerce of Persia is extensive, notwithstanding the absence of any roads. It is chiefly carried on with Russia, by the Caspian; and with British India, by way of the Persian Gulf. The chief exports are the native products already enumerated, together with copper wares, saffron, specie, skins, and sabres. Imports comprise indigo, calicoes, sugar, rhubarb, diamonds and other precious stones, from India, and a variety of manufactured goods from Europe. The principal ports are Bushire and Gombroon on the Persian Gulf, and Enzeli, Balfrush, and Astrabad, on the Caspian. The maritime traffic on the Caspian is entirely in the hands of the Russians, while that of the Persian Gulf is shared in by the English and the Sultan of Muscat.

AFGHANISTAN.

Boundaries.—N., Independent Tartary, Bokhara; W., Persia; S., Beloochistan; E., the Punjab, from which it is separated by the Suliman Mountains. Latitude, 27° 50′–36° 30′ N.; longitude, 60°–72° E. Candahar, near the centre of the country, is nearly in the same latitude with Austin the capital of Texas, Savannah, Marocco, Alexandria, Jerusalem, Lahore, and Shanghae.

Area and Population.—The area is estimated at 225,000 square miles, the population at 5,120,000; or nearly twice the area of the British Isles, with less than one-fifth of their population.

Surface.—Four-fifths of the country consist of rocks and mountains; the S.W. is a desert, with an elevation of from 3000 to 5000 feet, resembling the deserts of Arabia, but among the mountains (for which see under "Asia," p. 446) there are many fertile valleys.

Political Divisions.—These are four in number—viz., Cabool, Herat, Candahar, and Seistan.

Cabool.—Cabool 60, Jelalabad 3, Gundamuk n. (Cabool, *affl.* Indus), Charikar 5, Istalif 15 (*affl.* Cabool), Ghuznee 10 (Ghuznee), Bamian (in the Bamian Pass).

Herat.—Herat 45 (Heri-rood), Subzawur 5 (Haroot, *affl.* Lake Seistan), Laush, Furrah 5 (Furrah-rood), Khash, Bakwa n., Sakhir n. (Khash-rood).

Candahar.—Candahar 100 (Urghandab, *affl.* Helmund), Kelat-i-Ghiljie (Turnak).

Seistan.—Dooshak or Julalabad 10 (Helmund).

Descriptive Notes.—*Cabool* is celebrated above all other cities for its excellent fruits. It has an extensive transit trade between Russia, China, Turkestan, and India, and was the scene of the treacherous outbreak of the chiefs in 1842, when 3800 British soldiers and 12,000 camp-followers were massacred. *Jelalabad,* famous for the heroic and successful resistance made by the British troops under Sir R. Sale in 1841-2. *Istalif,* a considerable town, surrounded by fine gardens, was partly destroyed by the British in 1842. *Ghuznee* or *Ghizni,* a famous city, surrounded by a lofty wall flanked with numerous towers, is the entrepôt of the trade between Afghanistan and the Punjab. In the beginning of the eleventh century, it was the capital of an empire reaching from the Ganges to the Tigris, and from the Jaxartes to the Indian Ocean. *Bamian,* in the celebrated pass which leads from Afghanistan to Independent Turkestan—the only known pass across the Hindoo Koosh practicable for artillery. It is also remarkable for its cave dwellings and artificial excavations of unknown origin. *Herat,* long the capital of the extensive empire ruled by the descendants of Timur, is still a post of great military and commercial importance. It is the centre of a great trade between India, China, Tartary, Afghanistan, and Persia, and has several manufactures. It is regarded as the key of India from the west, and has alternately belonged to Persia and Cabool. In 1855 it was seized by the Persians, who were, however, compelled by the British to evacuate it. *Candahar,* a fortified city, and the winter residence of the Khan, has various manufactures, and a considerable transit trade between India and Persia. It is very ancient, having been probably founded by Alexander the Great. It was taken by Tamerlane in 138', by Shah Abbas of Persia in 1620, and was held by the English from 1839 to 1842. *Dooshak* or *Julalabad,* near the entrance of the Helmund into Lake Seistan, was formerly of much greater extent than at present, as appears from its extensive ruins.

Lakes.—Seistan or Hamoon in the west, and Ab-istada in the east.

Climate.—The summer heat is overpowering in the valleys and lower levels. The snows of winter lie long and deep in the mountainous parts, and the cold is very intense. This was the main cause of the sufferings of the Anglo-Indian army during their disastrous retreat in January 1842. Scarcely any rain falls in the western part of the country, where the climate greatly resembles that of Persia.

Minerals.—Gold, silver, mercury, iron, lead, copper, antimony, coal, sulphur, naphtha, and rock-salt.

Botany.—The most common trees are pines of various species, extending on the mountain-sides to an elevation of 10,000 feet. The cypress attains a gigantic size, and the oak and wild olive are found at great heights. The vegetation of the uplands resembles, in general, that of Europe, and that of the lowlands the flora and cultivated plants of India, as rice, cotton, sugar-cane, millet, maize, and turmeric.

Zoology.—The fauna of Afghanistan belongs to the Transition Province of modern zoologists (p. 58). The wild animals are neither numerous nor very formidable, with the exception of wolves and a small species of lion found near Cabool. Birds comprise the eagle, hawk, heron, crane, and many other European species. The principal reptiles are turtles, snakes, and scorpions. The camel and dromedary are the usual beasts of burden, while other domestic animals comprise the ass, mule, goat, dog, and cat. The sheep is remarkable for the size of its tail, consisting of a mass of pure fat, and weighing from 10 to 12 lb.

Ethnography.—The Afghans, or Pushtaneh, as they designate themselves, are a warlike, semi-barbarous people, and probably the aborigines of the country, though they claim to be descended from ancient Israel—an idea wholly discountenanced by historical and philological arguments. The Pushtoo language forms an important branch of the Medo-Persic group of tongues, which is itself a member of the Indo-European family. Many of its roots are Persian, some can be traced to the Zend and Pehlvi, while others are from an unknown source. Grammatically it more resembles the Zend than the Persian. It is a harsh, unpolished tongue, strongly contrasting with the soft musical language of Persia. The Pushtaneh number about 4,000,000, and are all Mohammedans of the Sunnite sect. The other principal tribes are the Huzarehs, inhabiting the wild highlands of the north, of Tartar or Mongolian descent, greatly resembling the Chinese in appearance, and generally Mohammedans of the sect of Ali; the Taujiks or Persians in the west, Hindoos in the south, and Eimauks, Uzbeks, and Beloochees, amounting together to upwards of a million.

Government.—The government of Afghanistan was formerly a monarchy, the crown being hereditary in a branch of the Dooraunee tribe, one of the four principal branches into which the Pushtaneh are divided; but the country is now divided into three separate and independent principalities—viz., those of Cabool, Candahar, and Herat. Seistan is subdivided into a number of petty chiefships, which acknowledge the supremacy of the ruler of Herat. The whole Afghan force, which is chiefly cavalry, amounts to about 16,000 men, and the combined revenue to about half a million sterling.

Manufactures and Commerce.—The manufactures are unimportant, and confined chiefly to woollen and cotton stuffs for home consumption. The transit trade is considerable, and carried on by means of camels and dromedaries, formed into caravans, as the roads are not adapted to wheeled carriages. The principal foreign trade is conducted with India, Persia, and Turkestan. The chief exports consist of horses (which are reared in great numbers, and transported to India), furs, shawls, chintz, madder, assafœtida, tobacco, fruits, and Herat carpets. The imports are numerous, comprising coarse cotton cloths, muslins, silks, brocade, horses, gold, silver, broadcloth, cutlery, and slaves from Arabia and Abyssinia.

BELOOCHISTAN.

Boundaries.—N., Afghanistan; W., Persia; S., the Arabian Sea, along which it extends for 600 miles; and E., Scinde. Latitude, 24° 50′-30° 20′ N., and longitude, 57° 40′-69° 18′ E. Kelat, the capital (latitude, 28° 50′), is on the same parallel with the mouth of the Mississippi, the Peak of Teneriffe, Suez, Bushire, and Delhi.

Area and Population.—The area is estimated at 160,000 square miles; the population at 480,000—or five times the size of Ireland, with about one-twelfth of its population.

Surface.—Nearly the whole country is mountainous, rugged, and elevated, except in the N.W. and along the coast; and water is deficient, being absorbed by the deserts. The Wushutee Mountains, between it and Afghanistan, attain in Takkatoo, one of their summits, an elevation of 11,000 feet; and the Hala Mountains, between it and Scinde, reach the same altitude.

Political Divisions.—Beloochistan consists of seven provinces—viz. Cutch-Gundava in the N.E.; Sarawan, W. of Cutch-Gundava; Kelat, S.E. of Sarawan; Jhalawan, S. of Kelat; Lus, in the S.E.; Mekran, in the S.W.; and Kohistan, in the N.W.

Towns.—Kelat, 12 n., Zehree 10 n., Gundava n. (Gundava, *affl.* Indus), Dadur 3, Teeree n., Kwettah or Shawl 2 (Naree), Sonmeanee 2, Bela 5, Wudd, Kozdar n. (Poorally). Jhow (N.W. Bela), Sarawan 3 (Bale), Kedje 10, Punjgoor (Dasti or Mooleanee), Gwutter, Kus-Surkund (Nugor), Teez, Choubar (coast), Bunpoor, Surhood (in Kohistan).

Descriptive Notes.—*Kelat*, a strongly-fortified town surrounded by mountains, and well supplied with water, was the stronghold of Nadir Shah. In 1839, and again in 1841, it was stormed and taken by the British. It has a considerable transit trade, with some manufactures of arms. *Dadur*, near the S.E. entrance of the celebrated Bolan Pass—one of the chief roads from India to the west—is said to be one of the hottest places known. In 1840, the British troops routed a Kelat force here. *Sonmeanee;* near it is the celebrated mud volcano of Hinglaj. *Jhow;* near it and around many remains of antiquity have been discovered. *Sarawan*, capital of province of same name, a small town surrounded by a mud wall, in a barren district. *Kedje*, the capital of Mekran, once a place of considerable importance, is now greatly decayed. *Bunpoor*, capital of Kohistan, a small ill-built town, in a sterile region, and defended by a fort.

Climate.—The climate in the higher parts is extremely cold in winter. Snow falls from October to the end of February, and in some places remains on the ground for two months. In the plains and valleys the heat in summer is oppressive. In February and March a good deal of rain falls; and from the latter month to September is the dry season.

Minerals.—The mineral wealth of the country is considerable, including gold, silver, lead, iron, copper, tin, antimony, sulphur, alum, salammoniac, and many kinds of mineral salts and saltpetre.

Botany.—The country belongs, botanically, to Schouw's "Region of Balsamic Trees," in which the vegetation is of a tropical character, including trees yielding gums and balsamic resins. The oak, ash, fir, and other trees common in Europe, are unknown. In the low and watered plains of the N.E. are grown rice, cotton, indigo, tobacco, sugar-cane. Rhubarb and the assafœtida plant abound in some districts, while on the mountainsides the tamarisk and babul attain the size of large trees.

Zoology.—The fauna of Beloochistan closely resembles that of Persia, both being embraced in the Transition Province of naturalists. Wild animals are numerous, especially leopards, wolves, hyenas, jackals, tigercats, and foxes; but, except on the eastern frontier, lions and tigers are rarely seen. There are also wild dogs, wild asses, antelopes, deer, hares, mongooses, mountain goats, and wild hogs, with various kinds of monkeys. The other animals, wild and domestic, are for the most part the same as those of Afghanistan.

Ethnography.—Two races of people are found in Beloochistan—the Beloochees and Brahooees. The former, inhabiting the western part of the country, are a rude, nomadic, pastoral people, supposed to have sprung from the Seljukian Turks. They are Mohammedans of the Sunnite sect, and speak a very corrupt dialect of the Persian, termed Beloochee, which contains no literature, save a portion of the Scriptures translated into it by the Serampore missionaries. The Brahooees inhabit chiefly the eastern provinces, and are most numerous in Jhalawan. Like the Beloochees, they are a pastoral people, but less addicted to rapine and predatory violence: they speak a language of Sanscritic origin, greatly resembling the Punjabee, but hitherto not reduced to writing. They are Mohammedans of the sect of Omar.

Government.—The eastern provinces are under the uncertain authority of the Khan of Kelat; the remainder being held by tribes who acknowledge no subjection except to their own chiefs. His armed force amounts to 3000 men, and his revenue to £30,000.

Commerce.—The trade of Beloochistan is usually conducted by means of caravans, and is almost wholly in the hands of Hindoos. Sonmeanee and Choubar are the only seaports. Agriculture is not much pursued, but the Brahooees rear large numbers of goats and black cattle. The principal exports are butter or ghee, hides, wool, drugs, dried fruit, fish, corn, and vegetable oil; and the chief imports are British and Indian manufactured goods, rice, spices, dye-stuffs, and slaves for Muscat.

Table of Rivers and Towns.—The following table contains the river-system of Asiatic Turkey, Arabia, Persia, and Beloochistan, and shows the natural position of all the towns belonging to those countries contained in this work, commencing at the S.E. angle of the Black Sea, crossing the Isthmus of Suez, and then following the coast:—

Rivers.	*Cities and Towns.*
Joruk,	*Batoum*, *Gonieh*, *Artvin*.
N. Co. Trebizond,	Rizah, TREBIZOND, *Tereboli*, *Kerasun*.
Yeshil Irmak,	*Samsun*, n., Amasia, Tokat, Marsivan.
Kizil Irmak,	*Iskelib*, n., *Tchorum*, Kankari, Kaisarieh, n., SIVAS.
Kara Su, *l*	*Tash-Kupri*, Kastamuni.
Devrek, *l*	Tosia.
N. Co. Anatolia,	Sinope, *Eregri*.
Chati Su,	Bartan, Zafran-Boli.
Filiyas,	*Boli*.
Sakaria,	*Shugshut*, Kutaya.
Murtadabad,	Angora.
Bosporus,	Scutari.
Sea of Marmora,	*Ismid*, *Isnic*, n., Brusa, Muhalitch, n.
Scamander,	*Bunar Bashi* (*Troy*).
W. Co. Anatolia,	*Adramiti*, SMYRNA, Scala Nova.
Caïcus,	*Bergamo* (*Pergamum*).
Kodus,	Manissa.
Phrygius,	*Al-Hissar* (*Thyatira*).
Pactolus, *l*	*Sart* (*Sardis*).
Cogamus, *l*	Alla Shehr (*Philadelphia*).
Mendere,	Aidin-Ghuzel-Hissar, Afium-Kara-Hissar, n.
Lycus, *l*	*Eski-Hissar* (*Laodicea*), *Khonas* (*Colossæ*).
S. Co. Anatolia,	Budrum (*Halicarnassus*), *Makri*, *Adalia*.
S. Co. Adana,	*Alaya*.
Ghiuk,	*Selefkeh*.
Cydnus,	*Tersus* (*Tarsus*).
Syhoon,	ADANA.
Jyhoon,	MARASH.
G. of Iskenderun,	*Iskenderun*, *Beilan*.
Asy or *Orontes*,	Antaki (*Antioch*), Hamah, Homs.
Co. of Tripoli,	*Latakia*, *Jebail*, *Tartous*, TRIPOLI.
Co. of Acre,	Beirout, *Deir-el-Ahmar*, *Saida* (*Sidon*), *Sur* (*Tyre*), AKKA (*Acre*), *Kisarieh* (*Cæsarea*).
Litany or *Leontes*,	*Tyre*, n., *Baalbec* (*Heliopolis*).
Nahr-el-Mukutta or Kishon,	*EnNasirah* (*Nazareth*), n.
Assuf or *Kunah*,	*Sebustieh* (*Samaria*), *Nablous* (*Shechem*).

Rivers.	*Cities and Towns.*
Co. of Gaza, ...	*Jaffa* (*Joppa*), GUZZEH (*Gaza*), *El Arish.*
Eshcol, ...	El Khalil (*Hebron*).
Sorek, ...	*Beit Lahm* (*Bethlehem*).
Jordan (Dead Sea), ...	*Eriha* (*Jericho*), *Tabaria* (*Tiberias*), *Paneas* (*CæsareaPhilippi*), n., *Hasbeya.*
W. Arabah, ..	*Ruins of Petra*, n.
Kedron, ...	El Khuds (*Jerusalem*).
Burada or *Pharpar*, ...	El Sham (*Damascus*), *Suk* (*Abila*).
Gulf of Suez, ...	*Suez, Tor.*
Gulf of Akaba, ..	*Akaba* (*Ezion-Geber*).
E. Co. of Red Sea,	*Yambo* or *Yenbo*, Jiddah, MECCA, n., *Tayf*, n., *Konfodeh*, *Hali*, *Loheia*, *Hodeida*, *Beit-el-Fakih*, n., *Zebid*, n., *Mocha*, Taas, n.
Gulf of Aden, ..	Aden.
Co. of Hadramant,	MAKALLA, *Shahr*, *Kisseen.*
Gulf of Oman, ..	MUSCAT, Muttra, Sohar.
Aftan, ...	LACHSA, DERAIEH, n.
W. Co. of Persian Gulf, ..	*Ras-el-Khyma*, *El Katif*, Grane.
Euphrates, ...	Bassorah, *Korna*, Shuk-el-Shuyuk, *Mesjid*, Hillah (*Babylon*), Kerbela, n., *Hit*, *Anah*, *Kirkissa*, *Dier*, *Kerkisiyeh*, *Rakkah*, *Bir*, *Malatiyeh*, n., *Palu*, *Mush.*
Kuran, *l*	SHUSTER.
Jerahi, *l*	*Dorak.*
Dizful, *l*....	Dizful.
Kerkhah, *l*	*Haweeza*, *Shus* (*Susa*), Kermandshah, Senna.
Koon, *l*	KHORUMABAD, *Nehavend*, Hamadan, n.
Tigris, ...	BAGHDAD, *Samara*, *Senn*, *Til Afar*, n., MOSUL, *Ruins of Nineveh*, *Sert*, n., DIYARBEKR.
Diyaleh, *l* ..	*Suleimaniyeh.*
Little Zab, *l*	*Kerkook*, n.
Great Zab, *l*	Senn, *Arbel* (*Arbela*), n., *Julamerk*, n.
Khabur, *l* ..	*Amadia.*
Khabour, *l*....	*Kerkisiyeh*, *Nizibin*, n., *Mardin*, n.
Belik, *l*	*Rakkah*, *Harran*, Orfah (*Ur of the Chaldees*).
Sajur, ...	Aintab, ALEPPO, n.
Tokhma, ...	*Malatiyeh*, *Gurun.*
Kara Su, or W. Euphrates, ..	Arab-Gir, Erzingan, ERZROUM, n.
Persian Gulf, ...	Bushire, *Cogoon*, *Leur Taurie*, *Nackiloo.*
Khist, ...	*Kazerun.*
Nabon, ...	*Feruzabad*, n.
Gulf of Oman, ..	*Gombroon*, *Sereek*, *Jask.*
Co. Beloochistan,	*Choubar*, *Teez.*
Nugor, ...	*Gwutter*, *Kus-Surkund.*
Dasti, ...	Kedje, *Punjgoor.*
Poorally, ...	*Sonmeanee*, *Bela*, *Jhow*, n., *Wudd*, *Kozdar.*

INDIA, OR HINDOSTAN.

Position and Boundaries.—N., Tibet and Independent Tartary; W., Afghanistan, Beloochistan, and the Arabian Sea; S., the Indian Ocean; E., Bay of Bengal and the Burman Empire.

Including Ceylon and the Tenasserim provinces, this vast peninsula extends from lat. 8° 4′ to 36° N., and from lon. 66° 4′ to 99° 30′ E. Calcutta, the capital of British India, stands on the central parallel, which is only one degree S. of the Tropic of Cancer, and in the same latitude as Mazatlan, Havannah, the Sahara, Mecca, Muscat, Baroda, and Canton, and the same longitude as Lake Lop Nor and Moorshedabad.

Area and Population.—Hindostan Proper* has an area of

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* The term Hindostan (*place or country of the Hindoos*) is still applied by the natives only to India north of the Nerbudda, which was conquered and colonised by their ancestors long before they felt strong enough to wrest any part of the Deccan (*south*) from the aboriginal tribes.

1,383,600 square miles, and a population of 178,628,579; but including the British Possessions in Further India, the area is estimated at 1,465,312 square miles, and the population at 180,884,297; or twelve times the area of the British Isles, and upwards of six times their population. The valley of the Ganges is by far the most densely peopled portion, having in its central parts 420 inhabitants to the square mile; but over the whole country the average is only 124, or not much more than half the density of China.

Political Divisions.—India is politically divided into four main sections, the respective areas and population of which are as follows:

	Sq. Miles.	Population.
British India	837,412	131,990,901
Protected States	450,791	40,948,735
Independent States	177,119	7,418,512
Foreign Possessions	1,296	517,299
Total	1,466,618	180,875,447

It thus appears that about four-sevenths of the entire area, and upwards of two-thirds of the population, are directly under British sway. The Protected States are all more or less under the control of Great Britain: in some of them, as in the Mysore, the administration of public affairs has been altogether assumed by the British Government; in others, the native rulers exercise sovereign power, with more or less restriction, as in Hydrabad, Gujerat, the Rajpoot States, and a variety of others, amounting in the aggregate to nearly two hundred. With the exception, indeed, of Gwalior, Nepaul, Cashmere, Bhotan, and one or two petty governments, all India is under British influence. All the others have entered into treaties with our Government, involving the obligation of protection on the part of the paramount power, and allegiance on that of the subordinate; all have relinquished the right of self-defence, and of maintaining diplomatic relations with each other; while the British Government has been constituted the arbiter of all disputes arising between native rulers.

The BRITISH POSSESSIONS are subdivided into three great sections, called Presidencies—viz., those of Bengal, Bombay, and Madras. The Presidency of Bengal, which is by far the largest, comprehends almost the entire valley of the Ganges, the upper basin of the Indus, extensive tracts in Central India, and numerous smaller territories on both sides of the Bay of Bengal; it embraces the ten subdivisions under-noted, which have an aggregate area of 573,778 square miles, and a population of 97,763,562. The Presidency of Bombay consists of two separate tracts bordering on the Arabian Sea—viz., Scinde or the lower basin of the Indus, and Bombay Proper, consisting of a narrow strip of irregular outline, extending from Gujerat to Madras and the Portuguese settlement of Goa; area 131,544 square miles, population 11,790,042. The Madras Presidency, extending from the Tumbudra and Kistnah to Cape Comorin, embraces the entire south of the peninsula, with the exception of two small native states; area 182,000 square miles, population 22,467,297. Of the numerous TRIBUTARY STATES the following are the principal—viz., Bahawulpoor or Daoudpootra (N.E. of Scinde), the Sikh states, Gujerat, Rajpootana, Malwa or Central India, Mysore, Hydrabad or the Nizam's dominions, Orissa, and Bundelcund. The INDEPENDENT STATES are now only four in number—viz. Gwalior or Scindiah's dominions, consisting of several detached districts in Central India; Cashmere or Gholab Singh's dominions, embracing the upper basin of the Indus; Nepaul and Bhotan, on the southern slope of the Himalaya. The FOREIGN POSSESSIONS are now of very limited extent: those of the French are almost annihilated, but they still retain possession of Pondicherry and Karical on the Coromandel coast, Yanaon on the Orissa coast, Chandernagore on the Hoogly, and Mahé on the Malabar coast. The Portuguese linger in a few spots, the scenes of their former grandeur - viz. Goa, S. of Bombay Proper; Damaun, N. of Bombay; and Diu, in the S. of Gujerat. The Danish possessions have become extinct, Serampore having been ceded to the British in 1845, and Tranquebar in the year following.

BRITISH POSSESSIONS.

I. PRESIDENCY OF BENGAL, TEN DIVISIONS.

Lower Provinces.—CALCUTTA 413, Culna 60, *Plassy*, Moorshedabad 147 (Hoogly), Rajmahal 30, Boglipoor 30, Monghir 30, Patna 284 (Ganges), Burdwan 54 (Dumooda), Dinagepoor 30 (Atree), Purneah 50 n. (Cosah), Behar 30 n., Gaya 43 (Fulgo), Dacca 66 n. (Brahmapootra).*

South-East Provinces.—Chittagong or Islamabad 12 (W. coast), Aracan 10 (Khaladaing), Rangoon 20, Prome 30 (Irrawaddy), Pegu 6 (Pegu), Moulmein 17 (Tenasserim coast), George Town 45 (I. Penang), Singapore 50 (Strait of Malacca).

North-West Provinces.—Benares 186, Mirzapoor 80, Allahabad 65, Cawnpore 60, Futtehgurh or Furukhabad 132, Hurdwar 100 (Ganges), Goruckpoor 54 (Raptee), Jaunpoor 27 (Goomtee), Calpee 22, Etawah 23, Agra 125, Muttra 65, Delhi 152, Suharunpoor 38 (Jumna), Banda 33 (Cane), Rewaree 27 (Sabee), Coel 36 n., Khoorja 22 n., Meerut 29 (Kallee Nuddee), Shajeehanpoor 63, Peeleebheet 27 (Gurrah), Bareilly 110, Moradabad 57, Rampoor 100, Almora 10 n. (Ramgunga), Sobraon, Loodhiana 47, Umballa 22 n., Simla 20 (Sutlej).

Oude.—Lucknow 300 (Goomtee), Oude 8, Fyzabad 100 (Gogra), Shahabad 50 (Gurra).

Punjab.—Lahore 120, Amritsir 115 n. (Ravee), Mooltan 80, Sealkote 20 (Chenab), Dera-Ghazee-Khan 25 (Indus), Jullundur 40 (Beas), Peshawur 56 (Cabool).

Ajmeer.—Ajmeer 25 (Loony).

Saugor and Nerbudda Territory.—Saugor 50 (Cane), Hosungabad 20, Gurrah 25, Jubbulpoor 30, Mundlah 25 (Nerbudda), Beitool 20 n. (Towa), Sohagepoor 20 (Sone), Seuni 24 (Wein Gunga).

Nagpore.—Nagpore 112 (Kanhan), Chanda 15 (Wurda).

Sumbulpore.—Sumbulpore 30 (Mahanuddy).

Cuttack.—Cuttack 40, Juggernaut or Pooree 30 (Mahanuddy).

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* Towns under 20,000 and above 5000 inhabitants cannot be enumerated here for want of space, but they will all be found under the River System of India.

II. PRESIDENCY OF BOMBAY, TWO DIVISIONS.

Scinde.—Hyderabad 24 n., Kurrachee 22 n., Tattah 20, Shikarpoor 30 n. (Indus).

Bombay Proper.—BOMBAY 566 (I. Bombay), Ahmedabad 130 (Subermatty), Baroche 33 (Nerbudda), Surat 134 (Taptee), Sattara (Kistnah), Punderpoor 20 (Beemah), Ahmednuggur 20 (Seena), Poonah 75 (Mootamoola), Nassick 25 (Godavery).

III. PRESIDENCY OF MADRAS, FOUR DIVISIONS.

Canara.—Mangalore 12 (W. coast).

Malabar.—Calicut 25, Cananore 20, Tellicherry 20, Cochin 30 (Malabar coast).

Carnatic.—MADRAS 720? (Coromandel coast), Tinnevelly 20 (Chindinthoora), Madura 20 (Vygah), Tanjore 80, Tranquebar 20, Trichinopoly 30 (Cauvery), Arcot 50, Vellore 52 (Palar), Nellore 20 (Pennair), Ongole 32 (Goondlagama).

Northern Circars.—Nizampatam 25 n., Masulipatam 28, Guntoor 24 n. (Kistnah), Kurnool 20 (Tumbuddra), Bellary 30 (Hindery), Rajamundry 20 (Godavery), Chicacole 50 (Nuglandee).

IV. ISLAND OF CEYLON, ONE PROVINCE.

Ceylon.—Colombo 32 (W. coast), Trincomalee 30 (E. coast), Galle (S. coast), Kandy (n. the centre).

PROTECTED STATES.

Bahawulpoor.—Bahawulpoor 20 (Sutlej).

Sikh States.—Putteeala 20 (Kosilla), Jheend 20 (Chitang), Sirhind 20, Belaspore 15 (Sutlej).

Cutch.—Bhooj 30 n. (Gulf of Cutch).

Gujerat.—Baroda 100, Cambay 10 (Mahi), Puttun 30, Pahlunpore 30 n. (Surraswuttee), Kurree 25 n. (Sundrawutty), Rajkote 20 (Muchu), Junagurh 20 n. (coast of Kattywar).

Rajpootana and Bhurtpoor.—Joudpore 130 n., Pallee 50 (Loony), Jessulmere 35, Nagore 40, Bekanair 60 (Indian Desert), Bhurtpoor 100 n. (Jumna), Kerowlee n., Boondee, Kotah (Chumbul), Jeypoor 400 n., Oodypoor 15 (Bunas).

Malwa, Bhopal, and Indore.—Indore 15, Dewas 25, Mhow (Sipra), Dhar 30, Purtabgurh n. (Chumbul), Bhopal (Betwa).

Kolapoor and Sawuntwarree.—Kolapoor n. (Kistnah), Sawuntwarree n. (Concan coast).

Cochin and Travancore.—Trivandrum 12, Quilon or Kolun 20 (Malabar coast).

Mysore.—Mysore 55, Seringapatam 12 (Cauvery), Bangalore 60 n. (Punnair).

Hydrabad.—Hydrabad 200, Secunderabad 34 (Mussy), Beder 50 (Manjera), Aurungabad 60 (Doodna), Assaye (Purna).

Orissa.—Sohnpoor (Mahanuddy).

Sirgoojah, Oodeypoor, and Rewah.—Sirgoojah (Murar), Rewah 7 n. (Tons), Oodeypoor (Hutsoo).

Bundelcund.—Jhansi 50, Dutteah 40 (Betwa), Punnah n. (Cane).

Muneepoor and Silhet.—Muneepoor (Kongbo).

Kooch-Behar.—Behar or Kooch-Behar (Neelcomar).

Sikim.—Sikim or Sikkim (Atree).

INDEPENDENT STATES.

Gwalior and Dholpoor.—Gwalior 50 (Soowunreeka), Oojein 130 (Sipra), Dholpoor (Chumbul).

Cashmere.—Cashmere or Serinugur 40 (Jelum), Iskardo, Leh (Indus).

Nepaul.—Khatmandoo 50, Lalita-Patun 24 (Bogmatty), Gorkha (Gundee).

Bhotan.—Tassisudon (Godadda).

FOREIGN POSSESSIONS.

French.—Pondicherry 30 (Coromandel coast), Chandernagore 30 (Hoogly).

Portuguese.—Panjim 20, Goa 5 (Concan shore).

Descriptive Notes.—In the foregoing lists we have enumerated one hundred and thirty-seven towns, each containing upwards of 20,000 inhabitants, of which fifty-four exceed 50,000, and twenty-three 100,000. British India alone contains about one hundred towns of more than 20,000 inhabitants; forty above 50,000; and eighteen above 100,000. Very few are remarkable for the amount of their population. Throughout the whole extent of the North-West Provinces, for example, there is not a single city that can boast of a population of 200,000; but Calcutta, Bombay, and Madras contain each about half a million.

BENGAL.—*Calcutta*, on the left bank of the Hoogly, an arm of the Ganges, 100 miles from the sea, is the capital of British India—Delhi being the Mohammedan, and Benares the Hindoo capital; it is a large and magnificent city, containing numerous splendid buildings, and nearly half a million inhabitants. In the European part of the city the streets are wide and the houses separated by gardens, but in the native portion the houses are mean, and the streets narrow and dirty: it is defended by Fort-William, the largest fortress in India, containing 619 guns, and 80,000 stand of arms. As a commercial emporium, Calcutta is unrivalled in Asia—its annual imports amounting to two millions sterling, and its exports to more than five millions. Previous to 1698, when the East India Company removed hither their factory from Hoogly, Calcutta was an inconsiderable village, surrounded by jungle; in 1756 the factory was attacked by the natives, and 146 Europeans were shut up in the famous "black hole," of whom 118 were suffocated before morning. *Culna*, a place of considerable trade, and a station for steamers plying between Calcutta and the North-West Provinces. *Plassy*, 83 miles N. of Calcutta, is memorable for the decisive battle fought between Clive and Sooraj-oo-Dowlah, 23d June 1757, which established British supremacy in India: it was precisely a century after this engagement that the Bengal native army mutinied, in the hope of casting off the British yoke, the idea having become general among the natives that the raj of the Feringhees was destined to last for only 100 years. *Moorshedabad*, a large, populous, but extremely unhealthy city, was the capital of Bengal till superseded by Calcutta. *Rajmahal*, on the hills, south of which live the Sauntals, who rose against the British in 1855. *Patna*, an immense assemblage of mud huts, maintains a large trade in opium, rice, wheat, indigo, saltpetre, and sugar: it was the scene of a frightful massacre in 1763, when Meer Cossim, the Nabob of Patna, murdered in cold blood 200 Englishmen. *Burdwan* has coal and iron mines in its vicinity. *Purneah* is largely engaged in the cultivation of indigo. *Bahar* produces vast quantities of opium, sugar, and cotton. *Gaya*, one of the sacred places of the Hindoos, is visited annually by upwards of 100,000 pilgrims. *Dacca*, once a place of great importance, is now rapidly falling into ruins, and its manufacture of muslin, once so celebrated, is now scarcely deserving of notice; the Baptist Mission maintains here a number of schools. *Chittagong*, formerly a place of considerable trade, and noted for its shipbuilding, has of late years greatly declined; it was ceded to the British by the Nabob of Bengal in 1760. *Aracan*, wrested from the Burmese in 1825, is extremely unhealthy, and has been the grave of many a British soldier. *Rangoon*, now fortified in the European style, came into the hands of the British in 1852. *Prome*, the most populous city in Pegu, was taken by the British in 1852. *Pegu*, once very populous, was annexed to British India in 1853. *Moulmein*, the principal town of the Tenasscim provinces, is a fine seaport and military station; vast forests of teak in the vicinity yield inexhaustible supplies of shipbuilding timber. *George Town* enjoys an unrivalled position as a mercantile station, and is fast rising into importance: nowhere in the world are so many different races assembled in so small a space. *Singapore* ("city of the lion"), on an island of same name, near the S. extremity of the Malay peninsula, was purchased from the Sultan of Johore in 1819; it has rapidly risen to importance as a great commercial entrepôt for the goods of Europe and Asia, and forms one of the penal settlements for British India. *Benares*, a large, populous city on the Ganges, and in the estimation of the Hindoos the most sacred place in the world; it is the capital of a British province of same name, is a crowded seat of native industry, and contains many wealthy native bankers and dealers in diamonds, for which it has long been famous. *Mirzapoor*, a great cotton mart and a place of considerable trade. *Allahabad*, capital of a province of same name, at the confluence of the Ganges and Jumna, is one of the sacred cities of the Hindoos, and is visited annually by about 200,000 pilgrims; it is the grand military depôt of the North-West Provinces, and was the scene of barbarous perfidy during the late insurrection. *Cawnpore*, one of the most important commercial cities on the Ganges, will be long memorable as the scene of Nana Sahib's brutal atrocities, 26th June and 15th July 1857. *Furukhabad*, one of the principal commercial cities of Northern India, contains some extensive banking establishments, and has in its vicinity the military cantonment of Futtehgurh: here Lord Lake defeated the troops of Holcar in 1805. *Hurdwar*, a great commercial city on the Ganges, where it issues from the mountains: here is held the largest fair in India, attended annually by about 250,000 traders and pilgrims. *Goruckpoor* was taken by the English in 1802; it contains a civil establishment and a great military cantonment. *Calpee*, an entrepôt for the cotton of the S.W. of India, has manufactures of paper and sugar-candy. *Agra*, capital of a province of same name, and formerly of the Mogul empire, is the seat of government for the North-West Provinces;* it was taken by the British in the Mahratta war in 1803; it contains the celebrated Tajmahal, or mausoleum of Shah Jehan, the finest existing specimen of Mohammedan architecture: it is built of white marble, inlaid with precious stones, and it is said that 20,000 men were engaged on it for twenty-two years. The city was seized by the mutinous sepoys in May 1857, and remained in their possession till the October following, when they were totally defeated by Colonel Greathed. *Muttra*, a sacred city, being regarded by the Hindoos as the birthplace of their god Krishna. *Delhi*, capital of a province of same name, and long the metropolis of the Mohammedan empire in India, stands on the right bank of the Jumna, and is defended by a fort and a strong granite wall: the approach from the S.E. is very striking, from the innumerable ruined monuments of its former prosperity and grandeur: the present city was erected by Shah Jehan in 1631, but the original Delhi, which extended along the banks of the Jumna for above 30 miles, was of very high, though unknown, antiquity. The Meerut mutineers arrived here on the 11th May 1857, and were immediately joined by the three native regiments stationed in the fort; having seized the arsenal, ammunition, and treasury, they cruelly massacred nearly all the European community, and proclaimed Mirza Jewan Bakht, the heir-apparent of the titular emperor of Delhi, and the lineal successor of the Great Mogul, as the sovereign of India; the city remained in the possession of the rebels till the 20th September following, when the British troops, under General Wilson, after a furious assault, regained possession of it, captured the king, and slaughtered great numbers of the insurgents. *Suharunpoor*, one of the handsomest English stations in India: here were taken the principal observations in the recent trigonometrical survey of the Himalaya. *Banda*, a great mart for cotton. *Meerut*, the headquarters of the Bengal artillery, is memorable as the scene of the outbreak of the terrible Indian rebellion, May 10, 1857, when the native troops shot their officers and massacred all the Europeans that could be found. *Peeleebheet*, celebrated for its rice, is the mart of a considerable traffic. *Bareilly*, capital of Rohilcund, a considerable place, with a brisk and lucrative commerce, is the seat of one of the six circuit courts of the Presidency, of an English college, and of Persian and Hindoo schools. *Moradabad*, the seat of a thriving trade, with a military cantonment in the vicinity. *Rampoor*, a large town, built of mud, and densely peopled. *Almora*, capital of Kumaon; near it was fought the battle of Sittolee, which decided the fate of the war between the British and the Ghoorkas. *Sobraon;* here the British gained a great victory over the Sikhs, in 1846. *Loodhiana*, the most flourishing commercial city in the Cis-Sutlej territory. *Umballa*, the principal town in British Sirhind, is an important military station. *Lucknow*, capital of the late kingdom of Oude, is a large and populous city, and contains some noble buildings, especially the splendid mausoleum of Asoph-ad-Dowlah, which can scarcely be surpassed in the lightness and elegance of its architecture: when Lucknow was attacked by the rebels, 30th June 1857, the British garrison, commanded by Sir H. Lawrence, and afterwards by Major Banks, Brigadier Inglis, and Sir H. Havelock, shut themselves up in the Residency, which they defended with unparalleled heroism for eighty-seven days, against 60,000 of the enemy, when at length they were relieved by Sir Colin Campbell. *Oude*, the former capital, is generally considered the most ancient city in Hindostan, having been founded about B.C. 2000; being regarded as the birthplace of the god Ramah, it forms one of the sacred places of the Hindoos. *Fyzabad*, a populous city, rapidly falling into decay, contains the remains of a fortress and palace. *Shahabad*, a large town of high antiquity, now fast running to decay. *Lahore*, capital of the Punjab, is a large and splendid city, containing numerous mosques and Hindoo temples: it was one of the residences of the Mogul emperors, and is surrounded for many miles by extensive Mohammedan ruins, the relics of its former greatness; it came into the hands of the British in 1849, after the final defeat of the Sikhs. *Amritsir*, the sacred capital of the Punjab, and the chief seat of the Sikh religion, is the most wealthy and commercial city in Northern India; it has manufactures of cottons, silks, fine shawls, and an extensive transit trade with Central Asia. *Mooltan*, the third city in the Punjab for population and commercial prosperity, was taken by the British in 1849, after a gallant and obstinate defence on the part of the enemy. *Peshawur*, near the Khyber Pass, is the frontier town of Hindostan, toward Afghanistan: since its occupation by the British, its trade has rapidly increased. *Ajmere*, capital of a British territory of same name, contains a medical school. *Oodeypoor*, capital of a state of same name on the S.W. frontier of Bengal, has recently lapsed to the British—the Rajah having committed the most savage excesses. *Jhansi*, which has also been lately annexed to British India, is well fortified, and has considerable trade, with manufactures of bows, arrows, and spears. *Saugor*, the principal place of the British district of same name, contains a fort, a military cantonment, a government school, and a civil establishment. *Nagpore* ("town of serpents"), contains numerous banking establishments, some silk and cotton manufactures, and carries on an extensive transit trade. Here there is a mission of the Free Church, and 10 miles N.E. is Kamptee, a large British cantonment. *Sumbulpore*, celebrated for its diamonds, which are principally found in the Mahanuddy. *Cuttack*, capital of a district, has some manufactures of silver filigree work, brass utensils, and shoes. *Juggernaut* or *Pooree*, is distinguished over India as one of the principal strongholds of the Hindoo superstition. The famous temple, which was completed in 1198, is said to have cost half a million sterling: here Krishna, one of whose titles is Juggernaut, or "lord of the universe," is the principal object of worship.

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* Since the mutinies, it has been proposed to transfer the seat of government to Allahabad.

BOMBAY.—*Hyderabad*, capital of Scinde, and 4 miles E. of the Indus, is a fortified city, containing a bazaar and a manufactory of arms; 6 miles N. of it is the village Meeanee, the scene of a memorable victory obtained by the Anglo-Indian army, under Sir C. Napier, over the Beloochees, in 1843. *Kurrachee*, the principal seaport of Scinde, has considerable trade. *Tattah*, the ancient capital of Scinde, is now much decayed: about 80,000 persons died of the plague here in 1699. *Shikarpoor*, the most populous and commercial city in Scinde, has a great transit trade through the Bolan Pass. *Bombay*, capital of the Presidency, and one of the most populous cities in India, is situated on a small island, which is connected with the mainland by an artificial causeway. The view from the sea is very beautiful, the background in the distance being formed by the Western Ghauts, which exhibit the boldest, most picturesque, and varying outlines imaginable: the harbour is landlocked, perfectly secure at all seasons, and embraces an area of 50 square miles; while its facilities for commerce and shipbuilding give it a superiority over every other in India. Bombay is strongly fortified, and its trade is only second to that of Calcutta—the exports alone being valued at five and a half millions annually. *Ahmedabad*, a large, handsome city, formerly noted for its magnificence, and for its manufacture in cloth of gold and silver; its prosperity was destroyed during the Mahratta war, and it is now greatly decayed; it was captured by the British in 1780, and is now the headquarters of the north division of the Bombay army. *Surat*, a large but meanly-built city, was in the eighteenth century an important manufacturing place, but is now greatly declined, the trade having been diverted to Bombay: the English factory, founded here in 1615, was the first mercantile establishment of the East India Company. *Sattara*, an important military station, defended by a strong fort. *Poonah*, formerly capital of the Mahratta empire, is the principal military cantonment of the Deccan: here is a Sanscrit college, founded in 1821, for the preservation of the ancient literature of the country.

MADRAS.—*Mangalore*, the principal place in South Canara, noted for the treaty of peace concluded here in 1784, between the East India Company and the celebrated Tippoo Sahib. *Calicut*, capital of Malabar, was the first place in India touched at by Vasco de Gama. *Cananore*, a place of great antiquity, has a trade in pepper, grain, timber, and cocoa-nuts. *Cochin*, a thriving town with extensive commerce, is the only port S. of Bombay where large ships can be built. *Madras*, capital of the Presidency, and probably the most populous city in India, is of modern erection, stands on level ground, and has no imposing appearance from the sea. It possesses no harbour, but merely a roadstead. Perhaps no city in the world of equal commercial importance is so disadvantageously situated for maintaining an extensive foreign trade: it is defended by a strong citadel, called Fort George, whose site was the first territorial acquisition of the British in India. *Tanjore*, celebrated for its great pagoda, considered the finest of the pyramidal temples of India, was taken from the French in 1773, and is an important manufacturing city. *Trichinopoly*, noted for its hardware, cutlery, jewellery, and cheroots of the finest quality. *Arcot*, formerly capital of the Carnatic, and the scene of a memorable engagement between Clive and Rajah Sahib in 1751. *Vellore*, one of the healthiest military stations in India: a fearful massacre of the Europeans took place here in the mutiny of 10th July 1806. *Nellore*; here in 1784 were discovered, under the ruins of a Hindoo temple, many Roman coins of the second century. *Masulipatam*, a fortified city, long famous for its chintz manufactures. *Bellary*, the headquarters of a division of the Madras army. *Chicacole*, noted for its muslin manufactures.

CEYLON.—*Colombo*, the capital and principal seaport of Ceylon, is strongly fortified; it was taken from the Dutch in 1796, and is now the entrepôt for most of the foreign trade of the island. *Galle*, or *Point de Galle*, has an excellent harbour, and is an important station for steam-packets. *Trincomalee*, a fortified town, with one of the finest harbours in the world. *Kandy*, the former capital of the island, is now little more than a village.

PROTECTED STATES.—These contain twenty-eight towns of more than 20,000; eleven above 50,000; and four above 100,000. *Bahawulpore*, capital of a native state of same name, has flourishing manufactures of silk and an extensive trade. *Putteeala*, *Jheend*, and *Sirhind*—the latter now nearly in ruins—are the respective capitals of small states of same name. *Bhooj*, capital of Cutch, in a plain near its centre, is renowned for its manufactures in gold and silver. *Baroda*, capital of the Guicowar's dominions, is a large and populous city extensively engaged in trade. *Cambay*, long celebrated for its manufactures of chintz, silk, and gold stuffs, is still noted for its precious stones. *Joudpore*, capital of Marwar, the most extensive state in Rajpootana, is chiefly remarkable for its immense citadel. *Jessulmere*, a walled town, on a rocky tract near the Indian desert. *Bekanair*, a large town, situated in a singularly desolate spot in the desert. *Bhurtpoor* carries on an extensive trade in salt, derived from a lake in the vicinity; it was at one time strongly fortified, and Lord Lake lost 8000 men under its walls in 1805. *Kerrowlee*, a populous city and capital of a state, contains fine buildings and agreeable gardens. *Boondee*, capital of a state of same name, is celebrated for its palace of unsurpassed beauty. *Kotah* is strongly fortified, and possesses considerable trade. *Jeypoor*, capital of a state of same name, is said to contain 400,000 inhabitants; it is regarded as the most elegant city in all India that has been solely erected by the natives; it contains a fully-equipped native observatory. *Indore*, capital of Holcar's dominions, contains numerous Brahminical temples and a British residency. *Kolahpoor*, the scene of a rebellion in 1844, which was put down by a British force *Mysore*, capital of the native state of same name, is a large, well-built town, with a fort and British residency. *Seringapatam*, a celebrated town and fortress, was the capital of Mysore under Tippoo Sahib, by whom it was strongly fortified: of the numerous sieges it has sustained, the most famous is that of the British, in 1799, when it was taken by assault, and Tippoo slain. *Bangalore*, a large fortified town containing the palace of Tippoo Sahib, was taken by the British in 1791, when it became the headquarters of the British resident in Mysore: it is frequented by Europeans on account of its salubrity. *Hyderabad*, a large, beautiful, and densely-peopled city, capital of the Nizam's dominions, contains a British residency, and is surrounded by fine gardens: near it *Golconda*, with fine old mausoleums, and famed as a depôt for diamonds and other jewels, which, however, are not brought from the immediate vicinity. *Beder*, once the capital of a principality, is a large city, surrounded by lofty walls; it is chiefly noted for its manufacture of Bedari-ware—an alloy of tin and copper used for the bowls of tobacco-pipes, &c. *Assaye*, the scene of the late Duke of Wellington's brilliant victory over an immensely superior Mahratta force in 1803. *Aurungabad*, once the capital of an extensive province of same name, but now mostly in ruins, was the favourite residence of Aurungzebe, the last Mogul Emperor: near it, *Ellora*, noted for its remarkable cave-temples, which, in magnitude and execution, surpass all other structures of the kind in India. *Punnah*, at one time celebrated for its magnificent diamonds, is now almost in ruins. *Kooch-Behar*, the capital of a small state, is renowned in the legends of Tibet. *Sikkim*, capital of a native state of same name, stands at the foot of the loftiest of the Himalaya: the inhabitants, who are chiefly Buddhists, are employed in rural industry, especially in the culture of the tea plant, recently introduced.

INDEPENDENT STATES.—These contain only five towns above 20,000 inhabitants; three above 50,000; and one (Oojein) above 100,000. *Gwalior*, capital of the possessions of Scindia's family, is a large town with a strong citadel situated on a precipitous rock near the centre; it has manufactures of gunpowder and firearms. The Gwalior contingent joined in the rebellion of 1857, murdered their officers, and spread devastation over the surrounding country. *Oojein*, a large fortified city, and formerly capital of Gwalior, is one of the seven sacred cities of the Hindoos, and the first meridian of their geographers: it contains numerous mosques and mausoleums, a great number of Hindoo temples, the palace of Scindia, &c., and has a great export and import trade. *Cashmere*, capital of Gholab Singh's dominions, extends for about four miles on each side of the Jelum, in the beautiful valley of Cashmere; it was long noted for its gorgeous shawls, manufactured from the fine hair of the Cashmere goat. *Iskardo*, capital of Bultistan, is now subject to Gholab Singh. *Khatmandoo*, capital of Nepaul, is mostly built of brick, and contains many Buddhist temples. *Gorkha*, the former capital of Nepaul. *Tassisudon*, capital of Bhotan, near its western frontier, is the residence of the Deb-Rajah, who has here a fortified palace.

FOREIGN POSSESSIONS.—*Pondicherry*, capital of the French possessions in India and the seat of their supreme Government, was, perhaps, the finest city in India previous to the war in 1756: it was taken by the English in 1761, and razed to the ground; indigo, sugar, and the mulberry are cultivated in the vicinity. *Chandernagore*, at one time a beautiful and opulent city, is now falling into decay. *Goa*, the former capital of the Portuguese possessions in India, once an opulent and powerful city, is now falling into a hopeless state of decay. *Panjim*, the present capital, is a handsome well-built town of about 20,000 inhabitants.

Capes and Peninsulas.—Peninsula of Kattiwar, between the gulfs of Cutch and Cambay; Cutch, S. of Scinde; Diu Head, S. of Kattiwar; Cape Comorin, the southernmost point of Hindostan; Dundra Head, S. of Ceylon; Point Calimere, E. of the Carnatic; Point Palmyras, E. of Cuttack; Cape Negrais, S. of Pegu.

Islands.—Ceylon, S.E. of the Carnatic; Manaar and Rameswaram, between Ceylon and the continent; Bombay, Elephanta, and Salsette, on the Concan coast; Laccadives, 150 miles W. of the Malabar coast; Maldives, 200 miles S.W. of Cape Comorin; Hattia, in the delta of the Ganges; Ramree and Cheduba, W. of Aracan; Mergui Archipelago, W. of Tenasserim; Prince of Wales Island or Pulo Penang, in the Strait of Malacca; Singapore, S. of the Malay Peninsula; Andaman and Nicobar Islands, 180 miles S.W. of Pegu.

Ceylon, about 60 miles from the continent, has been a dependency of Great Britain since 1815, previous to which, however, the English, after various encounters with the Dutch and French, had obtained possession of the stations on the coast. The area is estimated at 23,310 square miles, and the population at 1,500,000. The island is pear-shaped, well watered, and highly fertile: it is mountainous in the south, where Pedrotallagalla, its highest summit, rises to the height of 8280 feet. Adam's Peak, near the centre, 7500 feet high, is famous in Buddhist tradition; on its level summit is a large stone bearing an impression resembling that of a collossal human foot, believed by the natives to have been made by Buddha when he ascended to heaven. Ceylon contains a greater abundance of precious stones than any other country in the world; and iron, manganese, plumbago, nitre, and salt, are plentiful. The climate is very hot and moist, and the vegetation highly luxuriant. The most valuable trees are the cinnamon tree, the cocoa, and Palmyra palm, the tallipot, tamarind, and bread-fruit tree. The first named yields three valuable commercial products—cinnamon-bark, cassia buds, and oil of cinnamon, an essence obtained by distillation. Rice, cotton, pepper, tobacco, coffee, and various other vegetables are raised; but some recent attempts to cultivate the sugar-cane have failed. The fauna resembles that of Hindostan. Little is known of the aboriginal inhabitants, but "stupendous monuments of a remote and almost entirely unknown antiquity, ruins of cities, pagodas, and prodigious stone embankments for irrigation, proclaim their superiority over the present natives." The latter, however, are ingenious workers in metals, and in manufactures of cordage, matting, and baskets. The pearl-fishery on the N.W. coast, formerly the most valuable in the world, after being abandoned has been resumed. The inhabitants profess the Buddhist religion, while the languages spoken are the Tamil and Cingalese. *Manaar* and *Rameswaram* form a part of Adam's Bridge—a ridge of sandbanks which almost completely obstructs the channel between Ceylon and the continent. In the Hindoo mythology it figures as the route by which the demi-god Ram invaded Ceylon. *Elephanta*, a small island, six miles S.E. of Bombay, contains a celebrated cave-temple, in the face of a hill, sculptured with representations of the personages of the Hindoo mythology. The *Laccadives* consist of seventeen small islands of coral formation, belonging to Britain. The *Maldives*, also of coral formation, are fertile and well-watered, and are governed by a Sultan, who is tributary to the British. Nearly all the other islands enumerated above belong to Great Britain. The *Andaman* and *Nicobar* groups came into our possession very recently. The former are densely-wooded and thinly-peopled—the inhabitants being in the lowest stage of civilisation—and are considered well adapted for a convict settlement. The Nicobars belonged to the Danes till 1848, when they finally abandoned them; and the native chiefs have spontaneously hoisted the British flag.

Gulfs and Straits.—Gulf of Cutch, between Cutch and Gujerat; Runn of Cutch, N.E. of Cutch; Gulf of Cambay, E. of the Peninsula of Kattiwar; Gulf of Manaar and Palk Strait, between the Carnatic and Ceylon; Gulf of Martaban, S. of Pegu.

Mountain Systems.—Northern India contains the Himalaya, the loftiest elevations on the earth's surface (see under "Asia," par. 11). The mountains of Southern India, or of the Deccan, consist of the following ranges:—

1. The *Aravulli Mountains*, in Rajpootana, form the western wall of the plateau of Malwa, and separate the basins of the Ganges and lower Indus; Mount Aboo, the highest summit, attains an elevation of 5000 feet. 2. The *Vindhya Hills*, in Gwalior, Indore, and Bhopal, 2600 feet, form the S. wall of the plateau, and separate the Jumna from the Nerbudda. 3. The *Sautpoora Hills*, 2500 feet, between Indore and Caundeish, separate the basins of the Nerbudda and Tapty, and are continued to the east by the *Mahadeo Hills*, 4200 feet. 4. The *Western Ghauts*, extending for about 1000 miles along the Concan and Malabar coasts,

from the valley of the Tapty to Cape Comorin, form the water-shed between the Arabian Sea and the Bay of Bengal — thus constituting the W. wall of the table-land of the Deccan: their average height is about 2000 feet; but Benasson, near Koorg, the highest summit, is 7000 feet. They present an abrupt face to the west and a gentle slope to the east. Vast quantities of moisture are deposited on them (see "Climate"), and in them originate all the larger rivers of Southern India. 5. The *Neilgherries*, S. of Mysore, connect the Western with the Eastern Ghauts, and form the S. wall of the plateau of Mysore: highest summit, Dodabetta, 8760 feet. At their S.W. extremity is the great Palghat Pass, which affords easy communication between the Carnatic and Malabar coast. 6. The *Eastern Ghauts*, on the Coromandel coast, extend from the Neilgherries, in a N.E. direction to Balasore, and form the E. margin of the plateau of the Deccan; highest summit about 3000 feet; average elevation 1500 feet.

River System of Hindostan and Further India.—The following table, which is in continuation of that given under Beloochistan, embraces about 130 rivers, of which 40 enter the sea directly; and nearly 500 towns above 5000 inhabitants. When the population is less than 10,000, the name of the town is given in *Italics*, as also when the population is unknown. For the areas of the larger river-basins, and the capitals of States and Provinces contained in them, see under "Asia," p. 448.

Rivers.	*Towns.*
Indus,	Kurachee, n. Tattah, Meerpoor, HYDERABAD, *Mecanee*, Halla, Sehwan, Larkhana, Khyerpoor, *Bukkhur*, *Sukkhur*, Shikarpoor, *Roree*, *Subzulkote*, *Mittun-Kote*, Dera-Ghazee-Khan, Leia, *Bukhur*, *Dera-Ismael-Khan*, *Kalabagh*, *Kohat*, *Attock*, *Derbend*, ISKARDO, LEH.
Gundava,	Gundava, n. KELAT.
Naree,	*Dadur*.
Sutlej, *l*	*Ooch*, BAHAWULPOOR, Ahmedpoor, n. Khyrpoor, *Fureedkote*, n. Ferozepoor, *Sobraon*, Loodhiana, Sirhind, n. Umballa, n. Belaspore, Simla.
Chenab,	Mooltan, *Jhung*, *Ramneguh*, Vazeerabad, Sealkote, *Jamoo*, n. *Kishtewar*.
Ravee, *l*	LAHORE, Amritsir, n.
Jehlum,	Pind-Dadun-Khan, *Julalpoor*, *Bimber*, CASHMERE or SERINUGUR, *Pampur*, *Islamabad*.
Beas,	Jullundur, n. *Kulu* or *Sultanpoor*.
Sewan, *l*	Rawul-Pinde.
Cabool,	*Attock*, Peshawur, *Jelalabad*, CABOOL.
Logur,	*Logur*, *Ghuznee*, n.
Gulf of Cutch,	*Mandavee*, BHOOJ, n. *Moondra*, Anjar, n. *Jooria*.
Runn of Cutch,	*Nuggur-Parkur*.
Loony,	*Balotra*, JODHPOOR, n. Palee, Pokur, AJMERE, *Kishengurh*, Nusseerabad, n.
Sookree, *l*	*Serohee*, n.
Bunnas,	*Rhadunpoor*, *Deesa*.
Suraswutty,	Puttun, *Sidhpoor*, Pahlunpore.
Sundrawuttee,	Kurree, n.
Muchu,	Rajkote.
Co. of Kattiwar,	Poorbunder, Joonagurh, n. *Puttun-Somnauth*, *Diu*.
Gulf of Cambay,	*Gogho*, Cambay.
Sabermuttee,	Ahmedabad, *Ahmednuggur*.
Wautruck, *l*	*Kaira*.
Mahi,	Cambay, BARODA, *Champaneer*, n. *Loonawara*, *Dongurpoor*, n. *Banswarra*, *Rutlaum*.
Nerbudda,	Baroche, *Maundoo*, n. *Hindia*, *Hurda*, Hosungabad, Gurrah, Jubbulpoor, Dhama, Mundlah, *Ameerghur*.
Towa, *l*	Beitool, n.
Jamneer,	*Baree*.
Tapty,	Surat, *Dhoolia*, n. *Nussecrabad*, *Burhaunpoor*, *Asseerghur*.
Guirna, *l*	*Malligaum*, *Chandoor*.
Waugoor, *l*	*Adjunta*.
Purna, *l*	*Ellichpoor*, *Omrawuttee*.
Surpun,	*Gawulghur*.
Daman Gunga,	*Daman* or *Damaun*.
Concan Shore,	BOMBAY, *Bassein*,

Rivers.	*Towns.*
Concan Shore—*continued.*	*Kaliannee*, n. *Choull*, *Bankote* or *Fort Victoria*, *Dewgurh*, *Sawunt-Warree*, PANJIM or NEW GOA, *Goa.*
Gangawully,	*Soonda*, n.
Sherawutty,	*Honauwar*, *Bedenore.*
Coast of Canara,	*Coondapoor*, Mangalore, *Baicull.*
Malabar Coast,	Cananore, Tellicherry, *Mahé*, Calicut, Ponany, Cochin, Quilon, TRIVANDRUM.
Chindinthoora,	*Pallamcottah*, Tinivelly.
Vygah,	*Ramnad*, Madura, *Dindigul*, n.
Vellaur,	*Poodoocottah.*
Cauvery,	Negapatam, Karical, Tranquebar, Tanjore, Trichinopoly, Seringapatam, MYSORE, *Belloor.*
Tiromany, *l*	Salem.
Noyel,	Coimbatoor.
Bhovani,	*Ootakamund.*
Punnair,	Bangalore.
Coromandel Co.,	*Porto Novo*, *Cuddalore*, PONDICHERRY, MADRAS, *Pulicat.*
Palar,	*Sadras*, *Chinglepul*, *Conjeveram*, Arcot, Vellore.
Soornamoorkey,	*Droorajapatam*, Tripetty.
Pennair,	Nellore, *Chittavail*, n. *Cuddapah*, *Gooty*, n.
Goondlagama,	Ongole, *Doopund.*
Kistnah,	Nizampatam, n. Masulipatam, Guntoor, n. *Condapilly*, KOLAPOOR, *Sattara.*
Moonyair, *l*	*Cummamett.*
Mussy, *l*	HYDERABAD, Secunderabad, *Golconda.*
Dindee, *l*	*Ghunpoor* or *Gunnapoor*
Toongabudra,	Kurnool, *Hurryhurr*, *Adoni*, n.
Hindery,	Bellary, *Chitteldroog.*
Beemah, *l*	*Ferozabad*, Punderpoor.
Seena, *l*	*Sholapoor*, *Parinda*, Ahmednuggur.
MootaMoola,	Poonah, *Singurh.*
Dhona, *l*	*Talikote*, *Beejapoor.*
Malpurba,	*Badamy*, *Dharwar*, *Belgaum*, n.
Jummalair,	*Ellore.*
Godavery,	*Coringa*, Rajamundry, *Mungahpett*, *Chinnoor*, *Ramgeer*, n. *Neermul*, n. *Nandair*, Nassick.
Weingunga, *l*	*Kyraghur*, n. Seuni.
Wurda,	Chanda, *Hinghenghat*, n.
Paingunga,	*Idulabad*, *Mahoor.*
Kanhan,	*Kamptee*, *Pandoorna.*
Nag,	NAGPORE.
Manjera,	*Maiduck*, Beder.
Purna, *l*	*Jafferabad*, *Assaye*, *Dowlatabad.*
Doodna,	*Jalnah*, Aurungabad.
Orissa Coast,	*Vizagapatam*, Balasore.
Nuglandee,	Chicacole, *Bobilly.*
Ganjam,	*Ganjam*, *Vizinagur.*
Mahanuddy,	Pooree or Juggernaut, CUTTACK, *Sohnpoor*, SUMBULPORE, *Chunderpore*, *Konkeir.*
Byragurh,	*Byragurh.*
Inderowty,	Jugdulpore.
Hutsoo, *l*	*Ruttunpoor*, n. OODEYPOOR, n.
Sew, *l*	*Ryepoor.*
Braminy,	*Lanlum*, *Gangpoor*, *Jushpoor.*
Subunreeka,	*Jellasore*, *Echagur.*
Ganges,	CALCUTTA, Serampore, Chandernagore, Chinsurah, Hoogly, Culna, *Nuddia*, *Kishenagur*, Cutwa, *Plassy*, *Cossinbazar*, Moorshedabad (all on the Hoogly Branch); *Moorley* or *Jessore* (Huringata Branch); *Backergunge* (Backergunge Creek); *Pubna*, *Bayla*, Rajmahal, Boglipoor, Monghir, Bar, PATNA, Hajepoor, Dinapoor, Arrah, *Buxar*, *Ghazipoor*, BENARES, Chunargurh, Mirzapoor, ALLAHABAD, *Kurrah*, Manickpoor, *Futtehpoor*, Cawnpore, Bithoor, *Bela*, n. Futtehghur or Furruckabad, *Anopshehr*, Bijnoor, Deobund, n. Hurdwar, Sireenuggur.
Dumooda,	Burdwan, Ramgur.
Cassai,	*Midnapoor.*
Atree or Teesta, *l*	*Nattore*, Dinagepoor, SIKIM.

Rivers.	*Towns.*
Mahanunda, *l*	Malda, *Darjeeling.*
Cassai or Coosy, *l.*	Purneah, n. *Amarpoor, Khatang,* n. *Chayunpoor.*
Bogmatty, *l*	*Durbunga,* n. Lalita-Patun, KHATMANDOO.
Fulgo,	Behar, Gaya, *Koondah.*
Gunduck, *l*	*Bettiah,* n. Palpa, *Malebum.*
Gundee, *l*	*Gorkha.*
Sone,	Daoodnagur, Sasseram, *Rotasgur, Bandoogur,* Sohagepoor.
Coyle,	*Oontaree, Palamow.*
Murar,	SIRGOOJAH.
Goput,	*Burgowa.*
Nuddy, *l*	Belhary.
Gogra, *l*	Azimghur, n. *Oude,* Fyzabad, *Beyraytch,* Dipal, *Jemlah.*
Raptee, *l*	Goruckpoor.
Kalee,	*Kyregurh.*
Goomtee, *l*	Jaunpoor, LUCKNOW, *Kyrabad.*
Sai, *l*	*Roy-Bareilly.*
Tons,	REWAH, n.
Jumna,	ALLAHABAD, Calpee, *Jaloun,* n. Etawah, AGRA, BHURTPOOR, n. Muttra, DELHI, Soonput, Paniput, Kurnaul, n. Suharunpoor, *Landour.*
Cane,	Banda, *Punnah,* n. *Chattarpoor,* SAUGOR.
Betwa,	Dutteah, JHANSI, *Teary,* n. *Seronj,* n. *Islamnugur,* BHOPAL.
Sindh,	*Rampora, Narwar, Eesanghur.*
Befly,	GWALIOR, n. (on Suwunreeka).
Chumbul,	DHOLPOOR, *Baree, Kerowlee,* BOONDEE, n. KOTAH, DHAR, *Pertabgurh,* n.
Bunas, *l*	*Tonk,* JEYPOOR, n. *Chittore,* OODYPOOR.
Parbuttee,	*Rajgurh, Ashta.*
Kallysind,	Sarungpoor.
Sarde, *l*	*Neemuch.*
Sow, *l*	*Mundesoor, Pertabgurh.*
Sipra,	DEWAS, Oojein, INDORE, *Mhow.*
Sabee,	DELHI, Rewaree.
Chitang,	Kythul, n. JHEEND, *Hansi, Hissar.*
Girree,	NAHUN.
Kallee Nuddee,	Canouge, Coel, n. Allyghur, Boolundshuhur, Juhangirabad, Khoorja, MEERUT, Sirdhana, Mozuffurnuggur, Deobund, n.
W. Ramgunga, *l*	BAREILLY, Moradabad, Rampoor, ALMORA, n.
Gurrah, *l*	Shahabad, Shajeehanpoor, Peeleebheet.
Koh,	Nugeenah.
Brahmapootra,	*Luckipoor,* Dacca, n. *Bygonbarry, Rungpoor, Rangamutty, Gowalpara, Gowahatty, Bishenath, Jorhaut, Rungagorah, Saikwah,* n. *Sudiya,* n. *Jiga-Jounggar,* LASSA, *Jikadaze.*
Gomat, *l*	*Tipperah.*
Soorma, *l*	*Silhet, Chirra-Poonjee,* n. *Jynteea.*
Neelcomar,	KOOCH-BEHAR.
Godadda,	TASSISUDON, *Punakha,* n.
Bonash,	*Bijnee or Bisnee.*
Dihing, *l.*	*Jypoor.*
Co. of Chittagong and Aracan,	CHITTAGONG or ISLAMABAD, *Ramnoo, Akyab, Kyouk-Phyoo, Sandoway.*
Khaladaing,	ARACAN.
Irrawaddy,	*Bassein,* Rangoon, Prome, *Patanago, Salen,* Ava, MONCHOBO, n. Amarapura, *Momeit, Bhamo.*
Pegu, *l*	PEGU.
Kyau Duain or Kongbo,	MUNEEPOOR.
Sitang,	*Tongo* or *Tanou.*
Saluen,	*Martaban,* MOULMEIN.
Coast of Tenasserim,	*Amherst, Ye,* Tavoy, *Mergui, Tenasserim,* n.
St. of Mallacca,	Ponga, Queda, George Town, Mallacca, Singapore.
E. Co. Malaya,	*Johore,* n. *Pahang,* Tringanu.
Gulf of Siam,	*Sangora,* Ligor, *Kraw,* n. Mekhlong, *Bangpoo-soe,* Cantubari or Chan-ti-bon, *Canoao* or *Hatian.*
Meinam,	*Paknam,* BANKOK, Yuthia or Siam, *Talat-Khwin,* Nan or Nang-rung, n. Laphun-Chai, Changmai.

Rivers.	*Towns.*	*Rivers.*	*Towns.*
Cambodia or Me-Kong, or Me-nam-Kong.	*Penomping*, Udong, *Cambodia*, n. LANCHANG or HANNIAH; *Kiang-hung*, Chun-ning-foo, Yang-tchang-foo, Ta-li-foo, n. (last four in China).	Don-nai,........	Saigon, *Donga-nai*, n.
		E. Coast Anam,	*Ya-trang*, *Phuien*, *Quinhone*, Fai-fo, *Turon*, HUE.
		Tonquin,........	Kesho or Ca-chao, *Hean*; Ling-nan, Yuen-kiang (last two in China).

Lakes.—These are very few, considering the great extent of the country, and are chiefly confined to the basin of the Indus; as *Munchur*, in Scinde; *Wullur*, in Cashmere; *Rawan* and *Mansarowar*, at the sources of the Sutlej; *Pulicat*, on the coast of the Carnatic; and *Chilka*, on the Orissa coast. *Sambuhr*, in Rajpootana, yields great quantities of salt; and *Colair*, in North Circars, 160 square miles, is about to be drained by the Government. The most remarkable inlets of the sea are the *Runn of Cutch*, 6000 square miles, which, in the dry season, is a barren, sandy, desert, interspersed with small salt lakes.

Climate.—The elevated regions of Northern India enjoy a temperate climate; but in the central and southern regions the heat is very great. Here the year is divided into three seasons—the hot, the rainy, and the temperate.

The *hot season* commences in March and continues till the beginning of June. The sun is then scorching, the ground brown and parched, dust flies in whirlwinds, the brooks become dry, small rivers scarcely keep up a stream, and the largest are reduced to comparatively narrow channels in the midst of vast sandy beds. The great *rainy season* succeeds the hot, and lasts, with occasional intermissions, till October. The vapours borne by the S.W. monsoon are condensed on the Western Ghauts, and the rain falls in torrents along the west coast. At Bombay 16 inches of rain have been known to fall in a single day; and at Mahabuleshwar, a sanatarium on the Western Ghauts, near Sattara, the fall is 254 inches in the year, of which 227 fall during the four monsoon months. A smaller monsoon from the N.E. succeeds that from the S.W., and is the cause of the principal rains that fall on the E. coast of the peninsula. The *temperate season* extends from October till the end of February. Though the heat is still very great, slight frosts sometimes occur for an hour or two about sunrise. The mean temperature of the year ranges from 66° to 83° Fah. Scinde, with the rest of the lower basin of the Indus, is nearly destitute of rain. The valley of the Ganges resembles Great Britain in respect to the quantity of moisture deposited—thus, at Calcutta, 64 inches fall annually; at Benares, 41; Allahabad, 27; Delhi, 20; Meerut, 32. Along the Brahmapootra the fall of rain is prodigious; in some places, as at Silhet, it amounts to 209 inches, and at Chirra Poonji, among the Cossya hills, the annual fall is ascertained to be 610 inches! at Najpore, in the Deccan, the fall is 40 inches; at Sattara, 40; Poonah, 19; Cape Comorin, 28; Madras, 43; Bombay, 80; Colombo, 99; Chittagong, 86.

The Geology of India was long imagined to be very uninteresting, but recent investigations have proved it to possess considerable variety. Granite and metamorphic rocks abound in the Deccan and other parts of Southern India, in Orissa, Malwa, and the Himalaya range. Trap covers an immense area in Western India, between Goa and the Gulf of Cambay, and stretching from the Arabian Sea to Nagpore, with outliers at Rajmahal, about the head of the Gangetic delta, and at Rajamundry, near the apex of that of the Godavery. Of sedimentary rocks, the Palæozoic are limited to the Himalayas and the Punjab; but Mesozoic strata, including an inferior kind of coal, occur in the W. of Bengal, Orissa, Behar, the Nerbudda territory, Nagpore, and Cutch; while others of lower Cretaceous age are found in the neighbourhood of Pondicherry and Trichinopoly. The oldest tertiary strata appear to be a Lower Eocene deposit, for the most part freshwater, connected with the trap above mentioned, which is thus known to have been erupted since the commencement of the tertiary epoch. Middle Eocene beds, in continuation of the Nummulitic limestone of Southern Europe, Egypt, and Arabia, are developed in Scinde, on the W. and the Kossya hills on the E., between which there are found, in the Sewâlik or Sub-Himalayan range, Upper Miocene strata, remarkable for the number and size of their animal remains. India, unlike more northerly countries, is destitute of drift; but its surface is in many places composed of a red irony clay, often hardened into stone, called Laterite, while not unfrequently its plains are covered with a rich black soil, named Regur, favourable to the cultivation of cotton.

Minerals.—The principal are iron, tin, copper, gold, and diamonds. Coal also is found in many places, as Bengal Proper, Saugor and Nerbudda territory, Silhet, Assam, and Aracan. Salt is found in Rajpootana and the Punjab. The iron of the Carnatic is wrought with great skill. Diamonds are found principally at Punnah in Bundelcund, and at Sumbulpore; and precious stones of great beauty and variety in many places.

Botany.—The whole of Hindostan south of the Himalaya, together with Ceylon, the Eastern Peninsula, and the south of China, constitute the seventh phyto-geographic region of Professor Schouw; while his eighth region comprises the mountains of India between the elevations of 5000 and 12,000 feet.

The first mentioned, which is also called the *Indian Region* or *Region of Scitamineæ and Zingiberaceæ*, is unrivalled for the richness of its vegetation. Tropical plants are abundant, while the extra-tropical disappear; the trees are never destitute of flowers, and the number of arborescent plants is very numerous; the flowers are large and splendid, and there are many climbing and parasitical plants. The principal trees are the teak, which is reckoned superior to oak for shipbuilding; the sal, sisso, and babul; the cocoa-nut, every portion of which is rendered available to the wants of man; the mahua, important as an article of food; the bamboo, largely employed in scaffolding; the banyan, tamarind, mango, the palmyra and other palms, sandal, and ebony. The cultivated plants in this region are rice, sago, millet, cocoa-nut, tamarind, mango, ginger, cinnamon, mangosteen, peppers, indigo, cotton, tea (on the Upper Ganges and in Assam), plantain, rose-apple, coffee, bananas, guava, orange, shadock, sugar-cane, cloves, turmeric, water-melon, yams, ground-nut, soja, beans, and pulses. Mean annual temperature, 66°—83°. The number of flowering-plants in Hindostan alone is reckoned at 6954, of which 918 are monocotyledons, and 6036 dicotyledons. The *eighth* or *Emodic Region* embraces the Himalayas, above the height of 5000 feet, and comprises Cashmere, Sirmoor, Gurwhal, Kumaon, Nepaul, Sikkim, and Bhotan: here the mean annual temperature ranges from 66° to 37° Fah. It is sometimes called the Region of Rhododendra, as these form a distinguishing characteristic of its vegetation. Pines abound, including the magnificent deodar, together with oaks and other forest trees common in Europe, while tropical plants either wholly disappear or are very rare. The western portion of this region differs from the eastern in having a damper climate, a predominance of dicotyledonous forests, and a rarity of coniferous trees. The cultivated plants are the cereals and the orchard-fruits of Europe, mountain rice, and, in the lower regions, a few tropical plants. Wheat is raised on the sides of the mountains to an elevation of 10,000 feet. On the banks of the Lower Ganges, and all around the sea-coast, rice constitutes the staple food of the inhabitants; wheat is largely consumed in the North-Western Provinces; while the peasantry of the Deccan depend for subsistence on jowar, bajra, and a small poor grain called raggi.

Zoology.—The fauna of Hindostan is exhibited in detail under "Asia," par. 19, where the last column in the different tables shows the number of species in each order known to exist in this peninsula. The forests contain a variety of wild animals, the most remarkable of which are the elephant, rhinoceros, wild buffalo, and bear. Tigers, panthers, leopards, wild-boars, hyænas, wolves, and jackals, pervade both forest and jungle. Lions are met with only in particular localities, especially in Rajpootana and Gujerat. Other wild animals are the deer, antelope, and monkey.

Crocodiles, serpents, and other reptiles are very numerous, amounting in all to 179 species. There are 450 species of birds of every variety of plumage. Game and fish are abundant in all parts of India.

Ethnography.—About six-sevenths of the enormous population of India are *Hindoos*, the remainder belong to various races. Among these are reckoned 10,000,000 Arabs and Persians; 1,000,000 partly descended from early Portuguese settlers, mostly on the west coast; 80,000 Europeans, chiefly British; several millions of Afghans, chiefly located in the North-West Provinces, and professing the Mohammedan religion. The Hindoos, though generally spoken of as one people, really consist of an immense number of families and races, differing widely from each other in appearance, language, and customs. In general they are of slender build, graceful, agile figure, with a complexion varying from a dark olive to a light transparent brown. The face is oval, the forehead moderately large, the eyes and hair black, the nose and mouth generally of a European cast.

Languages.—Upwards of thirty distinct languages, embracing a great number of dialects, are spoken in India. These are resolvable into three main divisions.

1. Those derived immediately from the Sanscrit, the ancient Language of the Brahmins, in which their Sacred Books are written. These are spoken by the Hindoos proper of Northern India, and comprise the *Bengalee*, *Assamese*, and *Uriya* or *Orissa*, in the Lower Provinces—the first of which is spoken by about 30,000,000; *Hindi* or *Hinduwee*, very closely allied to the Sanscrit, and the most general language of the Hindoo race, in Oude and the North-West Provinces; *Hindustani* or *Oordoo*, a distinct language from the Hinduwee, though resembling it in idiom and construction. It can claim predominance in no particular locality, but is spoken by the Mussulmans in every part of India, and especially within the limits of the Hinduwee area, as in Delhi, Lucknow, Allahabad, Patna, and Moorshedabad. It is now adopted by the Indian Government as the general medium of communication with the natives, is the language of official documents and courts of justice, and by far the most useful to foreigners visiting India, whether in an official or commercial capacity. *Palpa*, *Kumaon*, and *Gurwhal*, W. of Nepaul, and N. of the Hinduwee, to which they are closely allied. *Gujerattee*, *Cutchee*, *Sindhee*, and *Ooch* or *Mooltan*, W. of the Hinduwee, which they greatly resemble. *Sikh* or *Punjabee*, is the language of the Sikhs in the Punjab, and derived from the now extinct *Pracrit*, formerly the vernacular language of this region. *Dogura* or *Jumboo*, in the hill country N. of the Punjab, and *Cashmerian* in the valley of Cashmere, are the most northerly of the Sanscritic languages in India. *Nepaulese*, in Nepaul, exhibits the phenomenon of a Hinduwee element engrafted on a language of monosyllabic structure. It has so much in common, however, with the Tibetan of Bhotan, Ladakh, and Bultistan, that some writers regard it as a corrupt Tibetan dialect. The *Mahrattee*, between the Arabian Sea and Nagpore, and between the Tapty and the Portuguese district of Goa, besides the great body of words derived from the Sanscrit, contains a few that may be connected with the non-Sanscritic languages of the Deccan. In addition to the above may be mentioned the *Oojein*, *Marwar*, *Harrotee*, *Oodeypoora*, *Bikaneer*, and other dialects of Rajpootana and Central India—all allied to the Hinduwee, and spoken by upwards of 12,000,000 of the population. 2. Languages of the Deccan.—These, in common with the foregoing, were long considered as the immediate descendants of the Sanscrit; but after closer investigation they are now generally regarded as the remnants of some ancient tongue, which at a very remote period prevailed over the whole peninsula—slight traces of it being still discernible in the purest Sanscritic dialects of the north. The languages of the Deccan, in words relating to common worldly affairs and in grammatical structure, are essentially different from the dialects of Northern India. It would therefore appear that there are in the Deccan races who were driven to the south at an early period of antiquity by the Hindoo invaders, from whom they received their religion, laws, and civilisation. The most northerly of these is the *Telinga* or *Teloogoo*, on the Coromandel coast, nearly the whole of

Hyderabad, part of Berar, and the eastern part of Mysore, extending northwards to the river Ganjam, and southwards to Pulicat. It is the softest and most polished of the languages of Southern India, and contains the greatest portion of Sanscrit words, which, however, form no part of its basis. *Canarese* or *Karnata*, S. of the Mahratta area, extending eastward till it meets the Telinga and Tamil dialects, and southwards to the Neilgherries. It greatly resembles the Telinga and Tamil, and is spoken by upwards of 7,000,000 of people. *Tulu* or *Tuluvu* and *Malayalim*, on the Canara and Malabar coasts, between the Western Ghauts and the sea, and from Goa to Cape Comorin. These are closely allied to each other and to the Tamil, of which indeed they may be regarded as dialects. *Tamil* or *Tamul*, the language of the ancient kingdom of Dravira, is spoken in the entire S.E. portion of the peninsula, from Pulicat to Cape Comorin, and from the Indian Ocean to the Western Ghauts. It also prevails in the north part of Ceylon, and altogether it is the language of 7,000,000 people. It is usually considered the type, or generic form, around which all the other languages of Southern India arrange themselves, as it possesses fewer affinities with the languages of Sanscritic origin than any other dialect of the Deccan. The *Cingalese*, in Central and Southern Ceylon, considerably resembles the Tamil in construction and idiom; but *Pali*, a dead language closely allied to the Sanscrit, is the learned and religious language of the island. 3. THE LANGUAGES OF THE BARBAROUS UNCONQUERED TRIBES OF THE MOUNTAINS.—These remain, hitherto, rude and unwritten; but so far as they have been examined they more resemble the second than the first group. Several curious instances of affinity have been traced between some of them and the Mongolian of Central Asia; and little doubt remains that the wild tribes speaking them belong to the true aborigines of the country, and are quite distinct from the Hindoos of Northern India. Among these rude dialects may be enumerated the *Gondee*, in Nagpore and the Nerbudda territory; and the *Kol*, *Bhumij*, *Rajmahali*, and *Sauntal* of Bengal.

Religion.—The principal forms of religious belief prevailing in India and adjacent territories are Brahminism, Buddhism, Jainism, Mohammedanism, Nanukism, Parseeism, and Christianity.

1. *Brahminism* is the religion of nine-tenths of the whole population of India Proper, and thus numbers among its votaries at least 130,000,000 of people. The Brahmins entered India from the W. side of the Indus, about B.C. 1100, and speedily subdued the former inhabitants, whom they compelled to embrace the religion of the conquerors, which consists of a variety of the most degrading superstitions and idolatrous rites. Though their first sacred writings, called the Vedas, written in the ancient Sanscrit, inculcate the existence of one Supreme Being, yet, in subsequent books, named Purans, many millions of subordinate deities are recognised, who administer the system of the universe. Brahma, Vishnu, and Shiva, are the three persons of the Hindoo trinity, and the principal objects of worship. A doctrine somewhat resembling the Incarnation of the Saviour finds a place in the Hindoo mythology—Vishnu, the second person of their trinity, being supposed to have frequently appeared on earth, in various forms, for the purpose of destroying evil spirits, spreading the true religion, protecting its votaries, and other beneficent purposes. Another leading doctrine of the Brahmins is the *transmigration of souls*. After death, the soul, they believe, passes into other bodies, either of men or inferior animals, according to the purity or impurity of the previous life. After ages have passed in this process of purification, it is at length absorbed into the essence of the Supreme Being, and so loses its identity. Brahminism is further characterised by multiplied forms and ceremonies, fatiguing pilgrimages, rigorous fastings, acts of the most revolting uncleanness, and the wilful sacrifice of life. But the system of *caste* is the main pillar of this ancient but monstrous superstition. Originally there were but four castes—the *Brahmins*, or priests, theologians, and physicians; the *Kshutryas* or military order; the *Vaisyas*, or agriculturists, merchants, and herdsmen; and the *Sudras*, or artisans, labourers, and servants. In the course of ages these four orders have become greatly intermingled, and, with the exception of the first and last, possess now little practical influence. The evils of caste, however, still remain unmitigated, as every trade and occupation has come to be regarded as a separate caste, the members of which refuse to eat, drink, or intermarry with those of any other caste. Certain classes of crime are punished by the loss of caste, and when once lost it is irrecoverable, and the criminal is suddenly plunged into hopeless misery. These outcasts, or persons of no caste, are termed *Pariahs* in the S., Mahaurs in the W., and Dhairs

in the N., and are very numerous, constituting, it is said, one-fifth of the entire population. In the towns they are confined to separate quarters and employed in the most degrading occupations; they are denied the common rights of humanity, and a Brahmin is contaminated if he should come within their shadow. The origin of caste in India, as in Egypt and other ancient countries, is lost in the darkness of the pre-historic ages. Schlegel and others conjecture, with much probability, that the lower castes are the aboriginal inhabitants, reduced by their Brahminical conquerors to their present condition of degradation. 2. *Buddhism*, at one time the predominant religion of the country, is now professed only in Bhotan, Ceylon, and Aracan. Buddha, its founder, regarded by the Brahmins as one of the incarnations of Vishnu, appeared as the reformer of Brahminism, about 600 B.C. The province of Behar appears to have been his native place. So far as his influence extended, he abolished caste, reformed the creed, and changed many of the religious observances of Brahminism. A bloody and long-continued war arose between his followers and the Brahmins; but the latter ultimately prevailed, and expelled the Buddhists to Ceylon, Further India, and other countries, about the beginning of the sixth century of our era. (See under "China.") 3. *Jainism*, a mixture of Brahminism and Buddhism, has numerous votaries in Central and Western India. It did not assume importance till the eighth or ninth century of the Christian era. 4. *Mohammedanism* embraces about 15,000,000 of the population, principally Afghans and Arabs, who are most numerous in the Punjab, Cashmere, the North-West Provinces, and parts of the Deccan. The Arabic language is here, as everywhere else, the depository of the Mohammedan faith. The Mohammedan invasion of India commenced in the eleventh and was completed in the fifteenth century, but most of the Mohammedans now in that country have descended from a Hindoo stock. 5. *Nanukism* or *Sikhism*, the religion of the Sikhs, is a compound of Brahminism and Mohammedanism, and is professed by about half a million of people. Nanuk, its founder, a native of the Punjab, was born in 1469. 6. *Parseeism* or *Fire-worship*, is the religion of the refugees from the religious persecutions of Persia. Though small in number, they are distinguished for their public spirit, skill, and their success in commerce. Zoroaster, the founder, or rather the reformer, of Parseeism, was born at Urumiah, in Azerbijan, B.C. 589. 7. *Christianity* was introduced into India in early times, since which there have been Syrian Christians in the S.W. of the country. The Portuguese established missions on the W. coast in the sixteenth century. In the seventeenth century the Reformed religion was introduced by the Dutch, but with little success. In 1793 the Baptist Missionary Society sent out its first agents to Bengal (Carey and Thomas), and, soon after, several other societies followed their example—as the London Missionary Society, in 1804; the Church Missionary Society, in 1814; the Church of Scotland Mission, in 1829, &c. In 1850 there were 22 missionary societies, having 260 stations, 403 preachers, and 551 native catechists; they had founded 309 native churches, having 18,410 communicants out of a native Christian community of 112,191, besides numerous male and female schools. In the same year they distributed 130,000 copies of the Scriptures, in thirteen different languages; and the entire cost of the missionary operations for the year was £187,000.

Science and Literature.—The whole circle of Hindoo knowledge is divided into eighteen parts, of which the first four are the *Vedas*. These are regarded as an immediate revelation from heaven, and as containing the true knowledge of God, of His religion, and of His worship. Next to the Vedas rank four *Upavedas*, which comprise the knowledge of medicine, music, and other arts. After these follow six *Vedangas*, which relate to pronunciation, grammar, prosody, religious rites and ceremonies; and finally, four *Upangas*, which treat of logic, philosophy, jurisprudence, and history.

The VEDAS are undoubtedly the most ancient compositions in the whole range of Sanscrit literature. Sir W. Jones fixes their date at B.C. 1500; Colonel Vans Kennedy, at B.C. 1200; while the learned Ritter, who has investigated the subject with the greatest care, believes they were either collected or composed from B.C. 1400 to B.C. 1600. Their high antiquity, combined with the obsolete dialect in which they are written, is such as to render the reading of them difficult even to the Brahmins. A complete collection of the Vedas, obtained by Colonel Polier, from Jeypoor, is now deposited in the British Museum, in eleven large folio volumes, but they remain for the most part untranslated. From the portions of them, however, which have been translated, and the analyses that have been given of their contents, the very important fact appears that the science of these books is as false as their theology—a most auspicious fact, certainly, to the missionary enterprise in India. Inferior to the Vedas in antiquity, but regarded as equally sacred, are the famous INSTITUTES OF MENU, consisting of a complete system of criminal jurisprudence, divided into twelve books. Sir W. Jones assigned them to B.C. 880, but Ritter is of opinion that the different parts belong to different times. These laws—being regarded as sacred by upwards of a hundred millions of people, whose habits of life have been moulded by their influence for so many generations—must ever form an object of the deepest interest to the philosopher and historian; and it would be impossible to comprehend the literature or local usages of India without a knowledge of their contents. Previous to the compilation of this legal code there were composed two grand epic poems. The *Mahâbhârat*, or the wars of Krishna, in eighteen cantos, containing 100,000 "slokas" or verses of two lines each, and said to be about 4000 years old; and the *Ramayana*, which narrates the banishment and wanderings of Ram, a prince belonging to the dynasty of the kings of Ayodhya; it is divided into seven books, and contains 24,000 distichs. The next most important division of the Hindoo sacred books consists of the PURANS. These are divided into two classes, each containing eighteen books. They consist of poetical representations of Indian mythology and fabulous history, and hold an eminent rank in the religion and literature of the Hindoos. They regulate their ritual, direct their faith, and supply, in popular legendary tales, materials for their credulity.

Besides theology and poetry, the Sanscrit literature embraces philosophy, jurisprudence, mathematics, history, geography, medicine, fables, tales, and dramatic compositions. Its poetry has assumed almost all the forms to be met with in Europe, and in every form it is characterised by consummate beauty and excellence. The most celebrated of its heroic poets is Valmiki, who has been likened to Homer; in the drama, Calidásá has been designated as the Indian Shakespeare; while Vyasa has been compared to Milton. Six principal schools of Hindoo philosophy are enumerated—viz., the *Mimansa*, founded by Jaimini; the *Vedanta*, by Vyasa; the *Nyaya*, founded by Gotama; the *Vaiseshica*, by Canade; and the two *Sanc'hyaya*, by Capila and Pantanjala.

Education.—The great body of the people are sunk in the deepest ignorance. Even among the Brahmins the blessings of a superior education are very partially diffused, most of them being ignorant of their sacred professional language. Some of the higher classes exhibit an easy epistolary style, though most of them can only read and sign their names. The few who advance beyond reading and ciphering study only the native sacred books, and hence their views are very limited and erroneous. The female sex is everywhere kept in a state of savage ignorance, as also the pariahs or people of no caste. The Indian Government has, for some years past, devoted considerable attention to the education of the natives, by establishing schools and colleges in many of the large towns. In 1853 alone, no less a sum than 3,100,000 rupees, or £310,000 sterling, were expended on native education, chiefly for the upper classes. The English language is taught in all the Government schools, as well as most other branches of a sound popular education. The natives of all classes, at least in the presidency seats and a few of the larger cities, exhibit the greatest eagerness to avail themselves of a good English education for their children; and some of the colleges and schools have already produced accomplished scholars. Unfortunately, however, for the highest success of the Government seminaries, the Bible is systematically excluded, though ready access is accorded to the sacred books of the natives.

Government, Army and Navy, &c.—In the numerous native states, whether Independent or Protected, the government is invariably a pure despotism—the people being everywhere crushed to the earth by their rapacious and unprincipled sovereigns. The relation of these to the British Government is indicated above, under "Political Divisions." Since 1859, the government of British India is vested in a Governor-General and

Council, who reside at Calcutta, and a Secretary of State for India, with a Council of fifteen members, in London. The administration was previously in the hands of a body of merchants, called the East India Company, but subject to the supervision of the British Parliament, through the medium of the Board of Control, whose President was a Cabinet Minister. The East India Company was incorporated by Queen Elizabeth in 1600: it had a capital stock of £6,000,000, shared in different proportions among 3600 individuals. The Mogul emperor gave them permission to establish a factory at Surat in 1611; their first establishment at Madras was formed in 1648; and Fort-William, at Calcutta, was erected in 1699. From that time, partly by treaty and partly by conquest, their authority had extended over the greater part of the peninsula. But the expiry of their charter in 1858, the lamentable events of the recent formidable insurrection, and other causes, have induced the British Government to take the immediate superintendence of their vast possessions in India into their own hands. The total armed force in India, previous to the rebellion of 1857, amounted to 729,457 men—including British of all arms, 289,457, of whom 202,849 were native sepoys; native states, Protected and Independent, 398,918; and contingent troops, commanded by British officers, 41,010. Almost the whole Bengal native army, which numbered 97,511 soldiers, joined in the mutiny of 1857. In 1859, the number of British soldiers serving in India was 92,739. In 1848 the East India Company's navy amounted to thirty-nine steam vessels, of 18,350 tons burden, and fourteen sailing vessels, carrying 2826 tons. In 1853-4 the Company's gross revenue amounted to £26,510,185, of which £16,680,000 was derived from land, £4,478,653 from opium, and nearly £3,000,000 from salt: the expenditure was £28,419,314. In 1858 the income was £38,706,766, while the public debt amounted to £60,000,000.

The **Commerce** of India is considerable, though a vast proportion of the resources of the country remains undeveloped. Restrictions which hindered commerce have, however, been gradually removed within the last twenty years, and India now enjoys free trade. The dues on British and foreign shipping are the same; the inland duties, and those on goods carried coastwise, are abolished. In the year 1849-50 the *Exports* were valued at £13,696,696, and the *Imports* at £18,283,543. The staple exports from Bengal are cotton, indigo, opium, silk piece-goods, sugar, oil, seeds, saltpetre, raw silk, rice and other grain. The great consumer of all these articles is the United Kingdom, except for cotton and opium, in which China precedes all other countries. In indigo, France follows Great Britain; but America precedes France in the consumption of silk goods, saltpetre, and sundries. From Madras the chief exports are cotton, grain, indigo, cotton piece-goods, pepper, but no opium. From Bombay the main exports are cotton, coffee, ivory, shawls, and piece-goods, sugar, pepper, raw silk, opium, and sundries. The imports from the United Kingdom consist chiefly of cotton fabrics, cotton-twist and thread, woollens, metals, hardware, glassware, spirits, wine, malt liquors, stationery, and, latterly, railway machines and materials. The imports from other countries are chiefly tea and silk from China.

Inland Communication is very defective: the ROADS are mere tracks, scarcely passable by wheeled carriages; stage-coaches or other public conveyances are unknown. Recently, however, serious attention has been bestowed to remedy this defect, and several great public works have been undertaken. Good roads in the neighbourhood of Calcutta and other large towns have been formed.

Several magnificent CANALS are in course of construction. One, in the Baree Doab (Punjab), passes by Amritsir: length of central line 247 miles; but including branches to Kussor, Sobraon, and Lahore, the aggregate length will be 466 miles. The Ganges Canal, extending from Hurdwar on the Ganges, proceeds through the centre of the Doab, by Meerut, to Allyghur, with branches to Cawnpore and Calpee, will unite the Ganges with the Jumna. This magnificent canal, probably the greatest of its kind in the world, will have, including its branches, a total length of 810 miles, and will cost a million and a half of money. Measures are also in progress for establishing a complete system of RAILWAYS over the country. One line, from Calcutta to Delhi, *viâ* Burdwan and Rajmahal, thence along the right bank of the Ganges to Cawnpore, and thence to Agra where it will cross the Jumna, has 120 miles completed and 1100 in progress. Another line will leave Bombay in a N.E. direction, to meet the Calcutta railway at Mirzapore on the Ganges: of this line 49 miles are open for traffic and 750 miles in progress. A third will connect Bombay with Madras, *viâ* Poonah and Bellary; 71 miles are finished, and 300 miles in course of construction. And a fourth will proceed from Madras to Ponany, *viâ* Vellore, Salem, and Coimbatoor; 90 miles are executed, and 300 miles in progress. The total number of miles open in 1857 was 298, with 2896 in course of construction.

FURTHER INDIA.

Boundaries.—Further India, also called the South-Eastern Peninsula and the Indo-Chinese States, consists of an assemblage of states lying between India and China, and forming together the easternmost of the three great peninsulas of Asia. N., China Proper and Tibet; W., India and the Bay of Bengal; S. and E., the Chinese Sea. Situated between latitude 1° 22′ and 27° N., and between longitude 91° 45′ and 109° E., it embraces 26° of latitude and 17° of longitude. Bankok, the capital of Siam, near the centre of the peninsula, lies on the same parallel as San Salvador, Cape Verd, Lake Tchad, Mocha, and Madras.

Area and Population.—These are very uncertain, owing to our imperfect knowledge of the country, but according to the best authorities, the area is about 879,706 square miles, and the population 27,650,718.

	Area.	*Population.*
	Square Miles.	
British Possessions,	81,706	2,255,718
Burmah,	263,000	8,030,000
Laos,	130,000	5,000,000
Siam,	220,000	6,000,000
Malaya,	45,000	365,000
Anam,	140,000	6,000,000

Thus the entire population is somewhat less than that of the British Isles, while the area is seven times greater. The British possessions, equal in size to Great Britain, do not nearly equal Scotland in point of population. The independent portion of Burmah is five times larger than

England, but has only half its population. Laos considerably exceeds the British Isles in magnitude, but contains less than one-fifth of their population. Siam, with seven times the area, has only double the population of Scotland; while Anam, with a smaller population than Ireland, has nearly five times its area.

Surface and Mountains.—A series of mountain-ranges running parallel with the meridians, and enclosing between them long narrow river-basins, form the most remarkable characteristic of the country. (See under "Asia," par. 11.)

Political Divisions.—The chief of these have been already enumerated. Laos comprises a number of nearly independent states, while about a million of the inhabitants are tributary to Siam. Malaya or Malacca is subdivided among several independent chiefs, the principal of which are those of Perak, Johore, Pahang, Kalantan, Tringanu, and Rumbowe. The towns in the British territories have been enumerated under Hindostan; those of the other states are as follows:—

BURMAH.—Monchobo 4, Patanago, Salen, Yandabo, Ava 30, Sagaing, Amarapura 30, Bhamo 10, Mogung n. (Irrawaddy), Tonghoor, Toungoo (Sitang).

LAOS.—Lanchang or Hanniah, Kiang-hung 5 (Menam-kong), Nang-rung or Nan 60, n., Laphun-chai 12, Chang-mai 25 (Meinam), Kemalatien.

SIAM.—Bankok 400, Paknam 6, Yuthia or Siam 100, Prabat n. (Meinam), Tringanu 60, Ligor 12, Kraw n., Mekhlong 10, Bang-pa-soe, Cantuburi or Chan-ti-bon 30, Hatian or Cancao, Quedah 8, Phunga 20 (Strait of Malacca), Penomping, Udong 12, Cambodia, n. (Me-kong).

MALAYA.—Perak, Salangore (Strait of Malacca), Johore, n., Pahang (Chinese Sea).

ANAM.—Hué 100 (Hué), Saigon 180, Dongo-nai, n. (Saigon), Ya-trang, Phuien, Quin-hone 8, Fai-foe 15, Touron 3 (Chinese Sea), Kesho or Cachao 100, Hean (Tonquin).

Descriptive Notes.—Omitting the British possessions, there are about fifty towns in Further India of above 5000 inhabitants; seventeen above 10,000; twelve above 20,000; seven above 50,000; and five (Bankok, Yuthia, Hué, Saigon, and Kesho) above 100,000. *Monchobo*, the capital of the Burmese empire since 1839, is said to be the birthplace of Alompra, a man of obscure birth, who founded the empire in the 18th century. *Patanago* has valuable wells of asphaltum in the vicinity. *Yandabo;* here was ratified in 1826 the treaty of peace between the British and the Burmese. *Ava*, the capital of Burmah till 1839, when it was destroyed by an earthquake. *Sagaing* and *Amarapura* were reduced to piles of ruins by the same catastrophe. *Bhamo*, the principal mart for the trade with China. *Mogung*, a large fortified town, has in its vicinity celebrated amber-mines, which attract merchants from great distances. *Lanchang*, capital of southern Laos, is said to be well built and populous. *Kiang-hung* exports large quantities of tea and cotton. *Nang-rung* contains a celebrated Buddhist temple. *Chang-mai*, capital of Middle Laos, is said to contain 25,000 inhabitants. *Bankok*, capital of the kingdom of Siam, is said by some to contain 400,000 inhabitants, one-half of whom are Chinese. A large portion of the community live in houses built on rafts, which float on the river. In the vicinity are large forests of teak, some iron mines, and the city is the seat of a large export and import trade. *Yuthia*, the former capital of Siam, was nearly destroyed by the Burmese in 1767. *Prabat* is celebrated as a place of pilgrimages, there being here a rock containing, as is alleged, an impression of Buddha's foot. *Mekhlong* exports large quantities of salt. *Cantuburi*, a fortified seaport, has an extensive export trade, and mines of precious stones in the vicinity. *Quedah* carries on an active trade with Pulo Penang: tin and gold are found in the vicinity. *Cambodia*, once the capital of an extensive empire which included a large portion of Laos and Siam, was recently reduced to ashes by the Anamese. *Perak*, capital of a small state in Malaya, produces tin, rice, and ratans. *Johore*, formerly flourishing, has dwindled down to insignificance. *Pahang*, capital of a small independent state, exports gold and tin. *Hué*, capital of the empire of Anam, is populous, well fortified, and contains a garrison, arsenal, and building-docks. *Saigon*, a large, well-built, and commercial city, with fortifications in the European style, contains a naval yard and arsenal. *Tai-foe*, at one time the emporium of the trade with China, was ruined by the wars which desolated the country towards the end of last century; but it still exports some sugar and cinnamon. *Kesho*, capital of the province Tonquin, and formerly the seat of English and Dutch factories, is a large city actively engaged in commerce.

Capes, Islands, Gulfs, and Straits.—See under "Asia," p. 445.

River System.—See under "Hindostan."

Lakes.—Nandokando, in the basin of the Irrawaddy, is the only lake of importance in Further India.

Climate.—The climate, though hot and moist, is more salubrious for European constitutions than that of Hindostan. The mean annual temperature ranges from 77° to 79° Fahr. The S.W. monsoon, lasting from May till the middle of September, is the rainy season in the W., where the annual fall of rain is from 150 to 200 inches. The N.E. monsoon, lasting from October to April, brings rain to the E. coast. The climate of Malaya is tropical, but the solar heat is tempered by sea-breezes. Here the thermometer ranges from 76° to 93°.

Minerals.—Gold, silver, copper, lead, tin, antimony, marble, serpentine, sapphires and numerous other precious stones; coal, nitre, sulphur, and petroleum or mineral oil, which is found in vast quantities near Patanago. The wells occupy a space of about 16 miles square, and occur in a bed of blue clay. Being cheaper than any other kind of oil, it is universally used in Burmah, notwithstanding its disagreeable odour.

Botany.—The botany of Further India is similar to that of Hindostan, both being comprised in Schouw's "Seventh Phyto-geographic Region." (See under "India.") Forests are numerous, and yield much valuable timber, among which are many woods used as dyes and perfumes. Agriculture is in a very backward state, but rice, cotton, indigo, tobacco, and the sugar-cane, are extensively grown.

Zoology.—Wild animals are very numerous, including the elephant, rhinoceros, tiger, leopard, buffalo, bear, hog, civet-cat, deer, antelope, goat, otter, dog, cat, with several species of baboons and monkeys; the peacock, parrot, and a variety of other birds of the richest plumage; the curlew, plover, and aquatic birds of all kinds. Alligators infest the large rivers, and the hooded snake, with several other noxious reptiles, the land. The sea abounds with an inexhaustible supply of fish. Mosquitoes and other insects exist in great multitudes.

Ethnography.—With the exception of the Malays, who possess the coasts of the peninsula which bears their name, and the Moi or negroes, who inhabit the interior of the same narrow tract, the whole of this extensive region is inhabited by nations of Mongolian origin. In physical aspect they greatly resemble the Chinese, though in certain districts they present a near affinity to the Hindoos. The Burmese, however, resemble the Malays, though in appearance and language they approximate more closely than the latter to the inhabitants of Hindostan. With the exception of the Malayan (for which see under "Oceania"), the *Languages* spoken in the Indo-Chinese states are all of the monosyllabic class, and allied to the Chinese, but with many polysyllabic terms engrafted from Hindoo and other sources. The tongues most widely spoken are the Burmese, Aracanese, Peguese, Siamese, Laos or Law, Cambodian, and Anamite. The *Religion* of the entire peninsula is Buddhism, except in Malaya, where Mohammedanism prevails, and in parts of Anam, where the higher classes are disciples of Confucius. The most abject superstitions prevail everywhere, and the grossest idolatries are practised.

Government, &c.—In these countries absolutism and tyranny have been carried to the highest extreme, and the most servile submission is exacted by the monarchs from all classes of their subjects. In Burmah and Siam the people are prohibited, under pain of death, from pronouncing the emperor's name. The laws are sanguinary, and the punishments awarded are marked by the greatest cruelty. With the exception of the priests and public functionaries, every male inhabitant is obliged to devote not less than every third year of his life to the public service, either as a soldier or as a labourer, while emigration is regarded as a treasonable offence, and equivalent to a theft of the prince's property. The public revenue of Burmah, which does not probably exceed £25,000, is derived from a tithe of the profits on cultivation, from fisheries, mines, and petroleum wells, and from a poll-tax levied on the unsettled tribes. The standing army is small, and consists mainly of infantry, but general levies of men aré made in time of war. The troops have no regûlar pay, but are maintained at the public expense. There is no standing army in Siam, but every male is liable to serve for a portion of the year, and numerous war-junks are kept up, which are manned by Chinese and other foreigners. Anam has a standing army of about 50,000 men, besides the royal guard, and 800 elephants. The navy consists of 200 gun-boats, 100 galleys, and 500 smaller vessels.

Commerce.—In a commercial point of view, Siam is the most important Indo-Chinese state, and carries on an extensive intercourse with China, Java, and Singapore. There are few roads in the country, but a navigable canal connects the Meinam and Menam-kong. The late king, who died in 1851, was an enlightened monarch, who trained his troops in the European manner, made canals and roads, built ships, introduced steamers, encouraged arts and commerce, and established printing from types—previously unknown in Siam. The commercial transactions of the Burmese are individually on a small scale, though the aggregate is considerable. Principal exports, raw cotton, teak-wood, catechu, stick-lac, bees-wax, elephants' teeth, gold, and silver. The Burmese are celebrated for bell-casting and gilding, dyeing silk and other fabrics. At Mengoon, near Ava, is a bell which is said to weigh 500,000 lb. In Anam the emperor monopolises all the foreign trade, in which five ships are employed—the commerce being conducted for the most part with Canton, Batavia, and British India.

THE CHINESE EMPIRE.

Boundaries.—N., Siberia; W., Independent Tartary; S., Hindostan and Further India; E., the Pacific Ocean. It extends from lat. 20° to 55° N., and from lon. 75° to 140° E.

Lake Kara-magna-i-Nor, in S. Mongolia (lat. 40° 20′, lon. 106° 20′), is the central point of this area; and Pekin, the capital of the Empire, ½° S. of the lake, is in the same latitude with Madrid, Naples, Constantinople, Bokhara, and New York. The area is estimated at 5,393,000 square miles, and the population variously, from 404,600,000 to 536,909,000. This gigantic Empire, therefore, embraces within its area one-third part of the Asiatic continent, or one-tenth of the land surface of the globe, and contains two men out of every five of the human race. It is half as large again as the continent of Europe, and contains 1½ times its population; or (to compare it with the other largest empires of the world) it is 1⅔ times the dimensions of the United States, but only two-thirds the size of the British or Russian empires; while its population is twice that of the former empire, and more than six times that of the latter. Its principal divisions are China Proper, Corea, Mantchooria, Mongolia, Tibet, and Chinese Turkestan. By far the most important of these is

CHINA PROPER.

Boundaries.—N., Chinese Tartary and Mongolia; W., Tibet and Burmah; S., Laos, Anam, and the Chinese Sea; E., the Pacific Ocean. Lat. 20°—42° N., lon. 98°—122° E. Shanghae, on the central parallel, is nearly in the same latitude with Marocco, Alexandria, Jerusalem, Lahore, and the head of the Gulf of California.

Area and Population.—The estimated area is 1,700,000 square miles, and the population 369,600,000, or 217 per square mile. The greatest length is 1600 miles, while the breadth varies from 900 to 1300 miles. It is fourteen times the area of the British Isles; considerably larger than Hindostan, it contains twice its number of people, or more than one-third of the whole human race. Incredible as this density of population may appear, it does not exceed that of the British Isles, and is greatly less than that of Belgium, though it is nearly double the density of Hindostan.

Surface and Mountains.—So far as known to Europeans, China consists of an elevated region in the N.; a great alluvial plain in the centre, celebrated for its fertility and the unrivalled density of its population, and consisting of the lower basins of the Yang-tse-Kiang and Hoang-Ho, which rank among the largest rivers of Asia; and in the S., of a region alternately undulating and interspersed with broad valleys and lofty mountains, which increase in elevation as they proceed westward. It is estimated that about two-thirds of the country are mountainous, while its general slope—as indicated by the direction of its principal rivers—is from W. to E. The principal mountain-chain, the Yun-ling, between China and Tibet, attains an elevation of 12,000 feet; the Nan-ling, 8000 feet, separates the basins of the Yang-tse-Kiang and Canton river; the Pe-ling separates the upper basins of the Yang-tse-Kiang and Hoang-Ho; the In-shan and Kihan-shan form the northern boundary. (See p. 447.)

Political Divisions.—China Proper is divided into eighteen provinces, each of which, on an average, is considerably larger than Great Britain. These are subdivided into what may be called departments, arrondissements, and districts—the capitals of which respectively terminate with *foo*, *chow*, and *hien*. Only cities of the first class, or those terminating with *foo*, can be noticed in this work; and even respecting these our knowledge is extremely scanty—foreigners being prohibited from penetrating into the interior of the country. As all these towns end with *foo*, that termination may be conveniently omitted.

SIX EASTERN OR MARITIME PROVINCES.

QUANG-TUNG.—Canton or Quang-chow 1000, Victoria or Hong-kong 10, Macao 52, Chow-king (Choo-kiang or Canton river), Chow-chao 50, Nan-yong (Pe-kiang), Whei-choo (Tong-kiang), Lien-chow, Lou-chow, n., Kao-chow, n., (S. coast), Chow-choo (Han-kiang), Swatow (E. coast), Kiong or Kien-chow 100 (Island Hainan).

FO-KIEN.—Foo-chow 1000, Yen-ping, Kien-ning, Cha-oo, n. (Min-kiang), Ting-chow (Han-kiang), Amoy 250, Chang-chow 800, n., Hing-wha (Fo-Kien channel), Tai-wan (Island Formosa).

CHE-KIANG.—Hang-choo 700, Chow-hing, Yen-chow, Kin-hao, n., Kin-chow, n. (Tsien-long), Wan-chow, n., Tai-chow, n., Ning-po 200, n. (coast), Hoo-chow (Tai-Hoo or Great Lake), Kia-hing (Great Canal).

KIANG-SU.—Nankin or Nanking 500, Ching-kiang (Yang-tse-kiang), Shanghae 135 (Woo-sung), Soo-choo 1500, Yang-chow (Great Canal), Hwai-ngan (Hoang-Ho).

SHAN-TUNG.—Tsi-nan, Woo-ting, n. (Ta-tsin Ho), Yen-chow, n., Tong-chang (Great Canal), Teng-chow, Lai-chow, Tsin-chow, n. (Gulf of Pe-chi-li).

CHI-LI.—PEKIN or PEKING 2000, n., Tien-tsin (Pei-Ho), Tai-ming (Eu-Ho), Ho-kien, Ching-ting (Hou-to), Chun-te, Quang-ping (S. of L. Pai-ho), Pow-ting (Tae-Ho), Siuen-hwa, n. (San-kan-Ho).

SIX CENTRAL PROVINCES.

SHAN-SE.—Tai-yuen, Pin-yang, Fuen-chow (Fuen-Ho), Loon-gan (Chang-Ho), Tai-tong (San-kan), So-pin, n. (*affl.* of the Hoang-Ho).

HO-NAN.—Kai-fong, Quei-te, n., Hoai-king, Ho-nan (Hoang-Ho), Yoo-ning, n. (Hoai-Ho), Nan-yang, n. (Han-kiang), Wei-hoe or Woee-kiun, Chang-te, n. (Eu-Ho).

NGAN-HWI.—Ngan-king, Tai-ping, Nhing-que, n., Chee-chow (Yang-tse-Kiang), Hoo-choo (Tsien-long), Fong-yang, Hing-chow, Lioo-chow, n. (Hoai-Ho).

KIANG-SI.—Nan-chang, Foo-chow, n., Swi-chow or Choui-chow, n., Ki-ngan, Kan-chow, Nan-ngan (Kan-kiang), Lin-kiang, Yooen-chow (Yu-Ho), Nan-kang, Kieou-kiang, Yaou-chow (Lake Poo-yang), Quang-sin (Shang-yaou), Kin-te-ching 1000 (Po-kiang).

HOO-PE.—Wo-chang, Han-kow, Han-yang, King-chow (Yang-tse-Kiang), Te-ngan n., Ngan-loo, Siang-yang, Yun-yang (Han-kiang).

HOO-NAN.—Chang-sha, Heng-chow, Yong-chow, n. (Heng-kiang), Pao-king (Lo-kiang), Chang-te, Ching-chow (Yuen-kiang), Yo-chow (Tong-ting).

SIX WESTERN PROVINCES.

QUANG-SI.—Quei-ling, Oo-chow, Ping-lo (Quei-kiang), Sin-chow, Se-ngen, n., Se-chin, n. (Choo-kiang), Chin-ngan (Ngo-yu), Lioo-chow, Kin-yuen (Lung-kiang), Se-min, Tai-ping (Nan-ngan).

YUN-NAN.—Yun-nan (Lake Tien-chi), Voo-ting, n., You-ngan, n. (Ta-yow), Ho-king, n., Yoong-pe, Li-kiang (Kin-sha), Yoong-ning (Ta-choong), Quang-nan, n., Chin-kiang (Choo-kiang), Lin-ngan, Yuen-kiang (Tonquin river), King-tong (Pa-pien), Kiang-hung, Chun-ning, Yoong-chang (Kioo-lung), Ta-li, n. (L. Eul), Mon-ling (Meinam).

QUEI-CHOW.—Quei-yang, n., Se-nan, Shi-sien, Sun-y, n., Tai-ting Wei-ning, n. (Oo-kiang), Tong-gin, n., Se-chow, Chin-yuen, Ping-yoo, Ton-yuen (Yuen-kiang).

SE-CHUEN.—Ching-too, (*aff.* Min-kiang), Sioo-choo, Quei-chow, Choong-king, Mahou (Kin-sha-kiang), Poo-kiang, Long-gan (Mooqva).

KAN-SU.—Lan-chow (Hoang-Ho), Ling-tao (Tao-Ho), Ping-liang, Koong-chang, n. (Wei-Ho), Kin-yang (Hooan-Ho).

SHEN-SE.—Si-ngan, Fung-siang (Wei-Ho), Yen-ngan (Yen-Ho), Han chong (Han-kiang).

Descriptive Notes.—MARITIME PROVINCES: *Canton*, also called *Quang-chow* and *Sang-ching*, at the head of the Bocca Tigris, or estuary of the Canton river, is one of the five cities open to foreigners, and the principal entrepôt of commerce in the Empire: its exports amount to from six to seven millions sterling annually, and its imports to upwards of three millions. Its principal exports are tea, silk, precious metals, cassia, sugar, and porcelain; and the principal article imported is opium, from Hindostan—the sale of which, though illegal, is tacitly permitted. In 1839 the Chinese Government forcibly obliged the English at Canton to deliver up 20,283 chests of opium, which having been destroyed, and compensation refused, war was declared by England. In 1841 the Chinese were totally defeated at Canton, and the city was seized by the British, but ransomed by the payment of 6,000,000 dollars. In 1847, in consequence of fresh insults on the part of the Chinese Government, the Bogue forts were captured by the British, and a new convention agreed to: subsequent grievances led to the capture of the city by the British and French troops in December 1857, when Yeh, the governor, was made a prisoner of war and conveyed to Calcutta (p. 508). *Victoria* or *Hong-Kong*, on an island of same name, on the E. side of the Bocca Tigris, opposite Macao, and 80 miles S.E. of Canton, became a British possession by virtue of a treaty with the Chinese, June 25, 1843: it has numerous storehouses and European dwellings, and steam communication with England; but was burnt and nearly destroyed by the Chinese in 1856. *Macao* has belonged to the Portuguese since 1586. It is well fortified; but the harbour does not admit large ships, and there is no communication with the interior of the country: here, for a time, resided Camoens, the Portuguese poet, and here he is said to have composed the Lusiad. *Kien-chow*, a large and populous city, capital of the island Hainan, has extensive trade with Macao, Assam, Siam, and Singapore. *Foo-chow*, a very populous city, and one of the five opened to European commerce by the treaty of Nankin. It is distinguished for its commerce and the industry of its inhabitants: large quantities of cotton goods and blue cloth are here manufactured, and 500 ovens are constantly employed in the production of porcelain ware. The black-tea district is only 70 miles distant, and there are extensive lead-mines in the vicinity. *Amoy* is one of the five cities open to foreigners, and has great trade, especially with Formosa and the maritime provinces of China: manufactures of porcelain, grass-cloths, paper, and candy-sugar, which, together with congou tea, form the principal articles of export.

Amoy was the great military depot of the province when taken by the English in 1841. *Chang-chow*, a very large and populous city, 36 miles S.W. of Amoy, its seaport, is the great centre of the silk-manufacture of the province. *Swatow*, a rising seaport S. of Namoa island. *Hang-chow*, at the southern terminus of the imperial canal, is the famous *Kinsai* of Marco Polo, and the capital, in his time, of Southern China; it has long been noted for its silk-manufactures, particularly for its flowered taffetas and different kinds of satin. *Ning-po*, one of the five cities open to European trade, and regarded by the Chinese as one of the most beautiful cities in the Celestial Empire, is six miles in circumference, is enclosed by walls 20 feet high, and is a place of great trade—the imports alone being valued at 7,650,000 dollars annually. *Nanking* ("Court of the South"), capital of province Kiang-su, and at one time of the entire empire, is now greatly declined, though still one of the greatest seats of manufacture in China; its *nankeen* cloths, silks, and paper, are reckoned superior to those made anywhere else, and it is the centre of a very extensive commerce; it is the residence of a viceroy, the seat of a great military depôt, and the principal seat of literature in the empire here was signed the treaty of peace between England and China, Aug. 29, 1842, by which European merchants and a British consul were allowed to reside at the ports of Canton, Amoy, Foo-chow, Ning-po, and Shanghae. *Shanghae*, the farthest north of the five ports above mentioned, is an important entrepôt of the commerce between the N. and S. provinces; it carries on a direct trade with Central Asia, has a large coasting trade, with flourishing manufactures of flowered silks, iron-ware, glass, paper, &c. The annual exports are valued at upwards of a million sterling—the principal articles being silk, tea, camphor, drugs, cassia, and the best porcelain; it was taken by the British in 1842, when 171 pieces of cannon and a large amount of military stores were captured. *Soo-choo*, a very large city, and one of the most flourishing and populous in the empire, near Tai-hoo lake in the line of the imperial canal, and in the richest and most populous district of the country; it is celebrated for the splendour of its buildings and the excellence of its manufactures, including silk goods, said to be superior in variety and richness to those of any other city in China: its trade is very extensive, and the signs of its prosperity are everywhere visible. *Tsi-nan* is venerated as the residence of a former dynasty of Chinese sovereigns. PEKING ("Northern Capital"), the metropolis of China since the thirteenth century, when Kublai Khan made it his residence instead of Nankin, the former capital, is situated on a sandy plain 100 miles from the sea and 60 miles S. of the Great Wall: with the exception of Jeddo, it is the only city in the world that rivals London in population, which is variously estimated at from two to three millions. It consists of two distinct cities, one of which is inhabited by Chinese, and is the seat of commerce; and the other by Tartars, divided into three separate enclosures—the first of which contains the garrison; the second, the residences of the principal dignitaries of the empire; and the third, the palaces of the Emperor and Empress. Pekin has a large printing and bookselling trade, with manufactures of glass, idols, and other articles; but the inhabitants chiefly depend for their subsistence on employment connected with the court. The description of the city given by Marco Polo, who visited it in 1271, is in many respects applicable at the present day. *Tien-tsin*, the port of Pekin, is noted for the treaty of 1858, between the Chinese and British.

CENTRAL PROVINCES.—*Tai-yuen*, a large and populous city, the occasional residence of the sovereigns of the last reigning dynasty, has manufactures of fine porcelain, felt carpets, and iron-ware. *Kai-fong* is noted as the principal seat of the Jews in China. *Nan-chang*, a very populous city, and the centre of the porcelain manufacture, has a great trade in silks, furs, and idols. *Kin-te-ching*, with a million inhabitants, contains the largest porcelain manufactory in the world: five hundred furnaces are constantly at work, but no foreigner has ever been admitted within the walls, lest the secrets of the process should be revealed. *Wo-chang*, in one of the most fertile districts of the empire, is one of the largest of the inland towns, and carries on an extensive commerce.

WESTERN PROVINCES.—*Quei-ling*, or *Kwi-lin*, in a fine valley watered by the Quei-kiang, is said to be fortified in the European style; but *Oe-chow*, on the same river, is the largest and most important city in the province. *Yun-nan*, on the least mountainous part of the table-land, is a considerable place, and carries on an active trade with the Burman empire. *Kwei-yang*, a comparatively small town, with mines of gold, silver, vermilion, and iron in the vicinity. *Ching-too*, a populous city, adorned with fine edifices, and the seat of an extensive trade, was at one time an imperial residence, but was ruined by the Tartars in 1646. *Lan-chow* carries on a brisk trade with the tribes inhabiting the table-land to the N. and W. of it. *Si-ngan*, a large and populous city, which is often compared with Pekin itself; it was at one time the metropolis of the empire, is strongly fortified, carries on a considerable trade, has manufactures of military and agricultural implements, and is the principal military depôt for the northern provinces.

Islands.—Hainan, at the mouth of the Gulf of Tonquin; Macao, Lantao, and Hong-Kong, in the Bocca Tigris, or estuary of the Canton river; Formosa, Amoy, and Hae-tan, E. of province Fo-kien; Chusan Archipelago, N.E. of province Che-kiang; Tsung-ming, in the estuary of the Yang-tse-kiang.

Seas, Gulfs, and Straits.—See under "Asia," p. 446.

Lakes.—Tai-hou or Great Lake, in Kiang-su, drained by the Woosung; Kao-you, Po-yang, and Toong-ting, in the lower basin of the Yang-tse-kiang; Hong-tse and Kao-yung in Kiang-su.

Climate.—The climate is eulogised as one of the finest in the world; but it is colder in winter and warmer in summer than corresponding latitudes in Western Europe. In the southern provinces the winters are intensely dry and cold, though snow rarely falls at Canton. March and April bring fogs and a mild temperature; much rain falls in May; and from July to September there is intense heat, with hurricanes, typhoons, and thunderstorms. Mean annual temperature at Pekin, 54°, summer 81°, winter 26°·7.

Minerals.—The precious metals occur in small quantities: there are rich mines of iron, lead, copper, zinc, and quicksilver; and perhaps the only metal which the country is known not to possess is platina. Among other mineral substances may be mentioned salt, nitre, alum, and gypsum. Coal exists in vast abundance; and, more important than all, inexhaustible beds of kaolin or porcelain earth of the finest quality. The early possession of this substance, and the great skill of the inhabitants in working it, has given the name of China to the beautiful ware which so long monopolised the markets of Europe. Nephrite, and various species of precious stones, especially agates, are also found.

Botany.—The vegetation of the southern provinces resembles that of Hindostan and Further India, and belongs to Schouw's seventh "Phytogeographic Region;" while Northern China, together with the eastern part of Chinese Tartary and Japan, comprises the sixth region of that naturalist. The latter occupies a middle position between the vegetation of Europe and that of North America, with a considerable affinity to the Indian flora.

The most characteristic and valuable botanical product is the tea-plant, which, until recently, was almost peculiar to China. It is cultivated from Canton northward to Nankin, and extends westward over the greater part of the basin of the Yang-tse-kiang; but it is found in its wild state as far N. as Pekin, and as far S. as Bankok in Siam. The soil on which it grows is composed of disintegrated granite and ferruginous sandstone. The black teas are mostly prepared in Fo-kien, and the green in Gan-hway, but both are derived from the same species of plant. (See under "Exports.") Among the cultivated grains rice is the staple product; and among the trees and shrubs most common in the fields and gardens are the sugar-cane, cotton, hemp, tobacco, rhubarb, indigo, varnish-tree, camphor-tree, tallow-tree, and cinnamon. Olives, oranges, pine-apples, &c., are abundant, and the mulberry is extensively reared for the silk-worm, an insect which is probably indigenous to China.

Zoology.—Most of the wild animals have long ago been extirpated, but the elephant, tiger, wild-cat, rhinoceros, and tapir still occur in the south-western provinces. Among birds and fishes are found many beautiful and peculiar forms; while a few harmless reptiles still exist. The most noxious insect is the locust, which frequently commits great devastation. The domestic animals are few in number, but comprise the horse, ox, sheep, and swine, while the dog is uniformly of one variety—of a pale yellow colour, and in form resembling our spaniel.

Ethnography.—The people belong to the Mongolian family of mankind, the physical and mental characteristics of which are described elsewhere (see p. 63). At a very early period the natives appear to have advanced to a considerable degree of civilisation, and to the practice of the arts of domestic life, especially those of printing, the invention of the mariner's compass, and the manufacture of silk and porcelain; but here they have paused, their government and institutions arresting the further progress of improvement.

LANGUAGE.—The Chinese language forms the principal member of the great monosyllabic family of tongues. This family is peculiar to the Mongol race, is confined to the S.E. angle of Asia, and comprises about fifty-three principal dialects, eighteen of which are spoken in China,—every province having a dialect peculiar to itself,—and the great majority of the remainder being rude and unwritten. The Chinese language, when written, is not phonetic, like the Indo-European and Shemitic tongues, but ideographic. Each written character represents a thought, an idea, and not a sound. There is therefore no alphabet, properly so called, but every different word that can be articulated has a distinct character to represent it. The great national lexicon, published in the seventeenth century by order of the emperor Kang-he, contains 30,000 distinct characters, all of which, however, are derived from 214 fundamental forms, which constitute the foundation of their meaning, and the basis of arrangement in the lexicon. Most of the words contained in this great work have now become obsolete, and only about 3000 words are in very general use. The same character or sign retains the same meaning all over China, but in every separate province the pronunciation given to it varies. Thus, a Bible printed in Chinese can be read and understood by every educated Chinaman from Pekin to Canton, provided only he has the volume before his eyes; but the inhabitant of one province cannot understand the inhabitant of any other when reading audibly in his presence. A still more extraordinary characteristic of the language is, that each written character represents a number of widely different significations, which are expressed by as many different tones of voice on the part of the speaker. This peculiarity renders it very difficult for Europeans to acquire a competent knowledge of the language.

RELIGION.—Three distinct systems of religious belief prevail in China. 1. *Fo*, or *Buddhism*, is the religion of the great mass of the people in China Proper, Mongolia, Mantchooria, and Tibet, the last-named country being its headquarters, and the seat of its most sacred lamas. 2. The *Taou* belief, or the system of the rationalists, is the next in importance as respects the number of its votaries. 3. *Yu*, or the doctrine of Confucius, which is adopted by the court and upper classes. Mohammedans are also numerous, especially in the province Shen-se, and Roman Catholics and Jews form a very small proportion of the population. Protestant missionaries have been settled in some of the maritime towns for the last fifty years. Dr Morrison was the first to occupy this wide field, and Dr Milne soon followed, both having been sent out by the London Missionary Society. Since then the number has gradually increased, and nearly all the Protestant missionary societies of Britain, Germany, and America have now their representatives in China, the total number of missionaries being at present from eighty to a hundred. Besides several single books of the New Testament, there are now three separate translations of the entire Scriptures, the first of which was executed in 1822, under the patronage of the British and Foreign Bible Society, and the last in 1854, when not fewer than 1,000,000 copies were printed and circulated throughout all parts of the empire.

EDUCATION AND LITERATURE.—The Chinese Government liberally encourages elementary knowledge, making that the only channel to office, rank, and honour. Accordingly, the taste for letters is almost universally prevalent, and schools abound in every town and village; but little useful information is communicated, beyond the familiar arts of reading and writing. At Pekin is a grand national university, supported by the state, but nothing is taught save the time-honoured principles of the ancient sages. In respect to the number, importance, and authenticity of its literary monuments, China undoubtedly holds a high rank among Asiatic countries. Its classic works, named *King*, date from a very remote epoch, and its annals are the most complete and continuous that exist in any language, save the Hebrew—ascending as far back as to B.C. 2204. Literary history, criticism, geography, and biography, are the subjects of a crowd of works, remarkable for their order and regularity. But every branch of science is stereotyped, and there are few civilised countries where real science is at a lower ebb. Their knowledge of mathematics and astronomy is very limited, and they have made but little progress in the fine arts. Their sculpture is only remarkable for its nice finish; their architecture is deficient in grandeur and elegance; the only objects they can paint well are those of inanimate nature; while, in drawing, they are wholly ignorant of perspective. Yet they have been the authors of what are justly considered in Europe as three of the most important inventions of modern times—the art of printing, the composition of gunpowder, and the magnetic compass. Printing from wooden blocks was practised by the Chinese as early as the middle of the tenth century of our era. The invention of powder, as compounded of sulphur, nitre, and willow-charcoal, is carried back to a very remote date; but its particular application to firearms seems to have been exclusively European. The attractive power of the loadstone had been known to them from remote antiquity; but its property of communicating polarity to iron is for the first time explicitly noticed in a Chinese dictionary finished A.D. 121. To these may be added two very remarkable manufactures, of which the Chinese were unquestionably the first inventors—those of silk and porcelain, in the latter of which they have never been surpassed.

Government, &c.—The form of government is in theory an absolute despotism, the emperor uniting in his own person the attributes of supreme magistrate and sovereign pontiff. The emperor is of the Mantchoo dynasty, and the great offices of state are usually held by Mantchoos. The governors of provinces are called *viceroys*, and those of cities *mandarins*. The authority of the emperor, even in the heart of China Proper, is held by a very insecure tenure. The Meaou-tu tribes in the south-western provinces have repeatedly risen in rebellion; and secret societies—the principal of which is called the Triad, which has for its object the restoration of a native dynasty—are rapidly extending. A civil war of the most formidable description, and characterised by the most revolting barbarities, has for several years been raging in all parts of the country. The Finances of the empire are consequently in a very unsettled state, though, if any credit is to be attached to official statements, the *Revenue* amounts to about £63,000,000 annually. The *Military Force* probably amounts to about 1,000,000 soldiers, including the troops stationed in the tributary provinces. The *Navy* consists of two fleets of war-junks, one for the sea, and another for the rivers, each amounting to 1000 vessels, and carrying about 50,000 marines; but the army and navy are in a state of extreme inefficiency, and are utterly powerless when opposed to European forces.

Among the defences of the country must also be reckoned the Great Wall, constructed in the third century before the Christian era, as a barrier to the incursions of the Tartars. Commencing at a fort on the Gulf of Pe-chi-li, it extends westward along the northern frontier, over hill and dale, for 1250 miles, with a height varying from 15 feet on the mountains to 30 feet on the plains. It is a rampart of earth, broad enough at the top to admit of several horsemen passing each other, is faced with brick and stone, or strengthened at regular intervals by large square towers, with gates for the convenience of travellers. But it is now falling into decay; the gates are negligently guarded, and smugglers pass openly through its crumbling breaches.

Manufactures and Commerce.—The manufactures are of the most varied, and often of the most exquisite description. Their porcelain, silks, nankeens, embroidery, and lacquered ware, are unrivalled for their excellence. They are also noted for their skill in engraving, in the carving of ivory, tortoise-shell, mother-of-pearl, horn, and other ornamental articles, in the manufacture of ink, paper, cabinet-work, and bell-casting, all being executed without the aid of machinery. The *Exports* consist mainly of tea (of which 122,000,000 lb. were sent to Britain and the United States in 1856), silks, nankeen, porcelain, lacquered ware, and articles of ivory. The principal *Imports* are opium from India (the trade being tolerated, though not legalised); cotton yarn, cotton cloth, linens, woollens, beer, iron, steel, and glass, from Great Britain; cattle and raw silk from Turkestan; furs, sheep, and woollen goods from Russia, &c. The trade with Russia is wholly conducted at Kiachta, on the Mongolian frontier, and with other countries at the five seaports, Canton, Amoy, Foo-choo, Ning-po, and Shanghae, opened by the treaty of Nankin in 1842; while by the treaty of Tien-tsin, in 1858, British subjects may frequent the cities and ports of Neu-Chwang, Tung-chow, Tai-wan, Swatow, and Kien-chow.

Russia is the only country that has managed to maintain habitual relations with the court of Pekin. She has ancient treaties under which a certain number of Russians are allowed to live in the capital, and to hold intercourse with the authorities there; but the position has always been an ignominious one, and they have never been allowed to hold intercourse with any of the ministers of high rank, and they have never exercised any real influence. Of late, however, great changes have taken place. Russia, who has no maritime outlet in Europe or Western Asia, has found the means, down the river Amoor, of getting an outlet into the Chinese Sea and the Pacific; and she will doubtless inherit, ere long, a large portion of the Chinese empire. Recently large concessions have been made to Russia in the unfettered navigation of the Amoor, and in the cession of a large tract of territory on the southern side of that river. The internal commerce is enormous; that of the eastern provinces is conducted chiefly by the Grand or Imperial Canal, which extends from Hang-chow to the Eu-ho, being a distance of 700 miles, with a width of 200 feet. Other canals and rivers carry on the communication to Canton, thus uniting that city with Pekin. There are numerous other canals connecting the navigable rivers, and probably the tonnage belonging to the Chinese is little short of the combined tonnage of all other nations.

CHINESE TARTARY.

Boundaries.—N., Siberia; W., Independent Turkestan; S., Tibet and China; E., Sea of Japan. Lat. 36°—56° N., lon. 76°—140° E. Ourga, the capital of Mongolia, near the centre, is in the same latitude with Paris, Stuttgart, Vienna, Ekaterinoslav, and the northern shores of the Caspian Sea and Lake Superior.

Area and Population.—The area is loosely estimated at 3,000,000 square miles, or five-sixths the area of Europe. The population is very uncertain, but probably it is not more than 29,000,000, being little more than that of the British Isles.

Surface.—This vast region, separated from Tibet by the Kuen-Lun, from China by the In-Shan, and from Siberia by the Altai, Daurian, and Yablonoi ranges, comprises the immense table-land of Central Asia—the most extensive plateau on the globe—and is occupied in its centre and west by the huge, rainless, and sandy desert of Gobi or Shamo, 1200 miles long, from 500 to 700 miles wide, and 3500 feet in elevation. The north of Mongolia is richly wooded; considerable tracts in Mantchooria and Chinese Turkestan are highly fertile, producing corn of all kinds, rice, cotton, and fruits, which, with cattle and various mineral and manufactured products, form the principal exports. The remainder is peopled by pastoral tribes, whose camps, like moving cities, are constantly passing from one place to another. Each tribe is subject to its own khan, and it is only in the settled parts of the country that the Chinese authorities exercise any real sway.

Divisions.—The principal subdivisions of Chinese Tartary, with the chief towns in each, are the following:—

LEAO-TONG.—Moukden (Leao-ho), King-tchou, Fung-whang-ching, n. (Yellow Sea).

COREA.—King-ki-tao (Kiang-ho), Ping-hai (E. coast).

MANTCHOORIA.* — Kirin-Oula, Ningouta, n. (Soongari), Tsistsihar, Merghen, n., Noun (Nouni).

MONGOLIA.—Ourga 7 (Tula), Maimatchin (Selenga), Karakorum (Orkhon), Ouliassouti, n. (Djabekan), Kobdo 10, n. (Lake Ike Aral), Dolonnor (Chan-tou), Kou-kou-Kota, n. (Hoang-Ho).

CHINESE TURKESTAN AND DZUNGARIA. — Yarkand 150 (Yarkand), Cashgar 16 (Cashgar), Khotan (Khotan), Khamil, Barkol, n. (Lake Barkol), Ili or Guldja 40 (Ili), Kutché, Aksu 9 (*affls.* Yarkand).

Descriptive Notes.—*Mookden* or *Chin-yang*, 380 miles N.E. of Pekin, was the residence of the Mantchoo sovereigns before they conquered China: it is now the residence of a Chinese viceroy. *King-ki-tao*, the residence of the sovereign of Corea, who is tributary to the Chinese emperor. *Kirin-Oula*, capital of Southern Mantchooria, is the residence of a Chinese viceroy, and the headquarters of the Chinese troops in the province. *Ourga* or *Kurun*, the principal town belonging to the Khalkas tribe, has a college of Mongolian priests, and is the seat of the deified lama of the Mongols. *Mai-matchin*, noted for being inhabited exclusively by males, forms, with Kiachta on the Siberian frontier, the entrepôt of the trade between China and Russia. *Karakorum* was formerly the capital of Genghiz Khan, who was a native of the Khalkas country. *Dolonnor* is said to be of vast extent, and to contain numerous Buddhist temples; it carries on great trade with Siberia: the inhabitants are noted for their skill in working iron and brass, while idols, bells, and other articles used in the Buddhist ceremonies are exported far and wide. *Yarkand*, the residence of a Chinese governor, is a large and populous city, and the chief emporium of commerce between China and the countries beyond the western frontier. *Cashgar* was a city of great commercial importance before the Christian era, and still carries on an extensive trade with Bokhara in tea, porcelain, rhubarb, silk, &c. The German traveller, Schlagintweit, was put to death here in 1858. *Khotan*, a populous city, inhabited chiefly by Uzbeks, has manufactures of leather, silk fabrics, and paper. *Khamil* has an extensive trade with China and Russia. *Kutché* has a Chinese garrison, and is deemed the key of Turkestan. *Aksu*, the military headquarters of this part of the empire, is resorted to by trading caravans from all parts of Central Asia.

Capes.—South-West Cape, the south-western extremity of Corea; Cape Patience, E. of Saghalien.

Islands.—Saghalien or Tarakai, E. of Mantchooria; the Corean Archipelago (principal, Amherst and Quelpaert), S.W. of Corea. Only the northern part of Saghalien belongs to China—the southern portion being subject to Japan. The inhabitants are called Ainos, and are of the same race as the Japanese. Area, 47,500 square miles; population, uncertain.

Seas, Gulfs, and Straits.—See under "Asia," p. 446.

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* By the recent treaty with Russia, the entire territory north of the Amoor, together with the towns and trading-posts on the right bank of that river, including Saghalien, Oula, and Oli, is now incorporated into the Russian Empire (see under "Siberia").

Lakes.—Nearly all the lakes of Chinese Tartary are comprised within the great central basin of continental streams. They have no outlet, and their waters are salt or brackish. The principal of them are the following, beginning at the N.W. and proceeding eastward:—*Balkash* or *Tenghiz*, between Chinese Turkestan and the Russian government Tomsk, receives the Ili, &c. *Temortou* or *Tuz Gul*, 100 miles S. of Lake Balkash; *Alaktou-kul* and *Alakoul*, farther E., are united by several channels, and the former has an extinct volcano in its centre; *Kessel-Bashi*, near the source of the Irtish; *Ike Aral*, N.E. of Kessel-Bashi, receives the Djabekan and Kobdo; *Oubsa*, N.E. of Ike-Aral; *Lob-nor* or *Lop-nor*, S. of the Thian Shan mountains. *Zaisan*, near the source of the Irtish, is not included in the continental basin.

Climate.—In so wide a region the climate must be highly varied, but few data exist to speak of it with precision. It is, however, much colder in winter and warmer in summer than France and other countries in corresponding latitudes of Western Europe. Scarcely any rain falls in the great desert, and the few oases that occur afford but a scanty vegetation.

The Minerals, Botany, and **Zoology** are almost wholly unknown. Gold, iron, tin, jade, jasper, and other precious stones are met with. Pines, fir, birch, ash, elm, and white poplar, grow in the mountains; as also red currants, wild peaches, and various shrubs. Mantchooria is one of the chief localities whence the Chinese obtain the wonder-working *gin-seng*—a species of ivy, the root of which is used as a stimulant—and here rhubarb is extensively cultivated. The cork-tree and the aspen are indigenous on both banks of the Amoor. Among wild animals may be mentioned the tiger, wolf, jackal, lynx, fox, antelope, argal, yak, in Chinese Turkestan; wild horses, camels, and asses in the stony steppes of the Lop desert; the Bactrian or two-humped camel, in the Thian Shan mountains; and boars, bears, wolves, hares, foxes, sables, squirrels, &c., in the forests of Mongolia.

Ethnography.—This country has been for ages the domain of the Mongolian race—one of the great subdivisions of the human family; to it belonged Attila, Genghis Khan, Kublai Khan, Timur the Tartar, and those other mighty warriors, whose rapid conquests are compared by Gibbon to the primitive convulsions of nature, which have agitated and altered the surface of the globe. They are allied to the Turks and Chinese, and are subdivided into numerous tribes, the principal of which are the Mongolians Proper, Calmucks, Khalkas, and Mantchoos. While Mantchooria has become an integral part of the Chinese empire, China itself has been governed by a dynasty of Mantchoo princes since 1624.

All the *Languages* spoken in Chinese Tartary belong to the Turanian or Finnc Tartarian family (see under "Asia," art. 21, and at p. 399). The chief of them ar the Mantchoorian, Mongolian, and Corean. The elemental principles of the firs two are almost identical with the Tartar and Finnish. In the simplicity of thei structure and the total absence of all inflections, properly so called, they approac nearer than any other class of languages to the monosyllabic type. The Corea greatly resembles the Japanese, but many Chinese words enter into its composition, Corea having received its literature and civilisation from China; but th alphabet is phonetic, and not symbolic, like the Chinese. The *Religion* of Buddh prevails in Mantchooria and Mongolia; Buddhism and Mohammedanism in Chines Turkestan (where are also found some Christians and Jews); and Buddhism an Confucianism in Corea.

TIBET, OR THIBET.

Boundaries.—N., Chinese Tartary; W., Kundooz and Gholab Singh's dominions; S., the Himalaya and Burmah; and E., China. Lat. 27°—36° N., lon. 78°—104° E. Lassa, the capital, on the central meridian, is in the same latitude with Mogadore, Cairo, Bassorah, Mooltan, Shanghae, and New Orleans.

Area and Population.—The area is conjectured to be about 693,000 square miles, or more than five times the area of the British Isles. The population is probably about 6,000,000, or less than that of Ireland.

Surface.—A lofty table-land, from 10,000 to 14,000 feet in elevation, enclosed by stupendous mountain-chains, the loftiest on the globe, and giving origin to nearly all the great rivers of Southern Asia—as the Indus, Sutlej, Jumna, Ganges, San-po or Brahmapootra, Irrawaddy, and Yang-tse-kiang.

Divisions.—The portion subject to China is understood to comprise two provinces—viz., Eastern and Western Tibet—of which Lassa and Teshoo-Loomboo are respectively the capitals. Bultistan or Little Tibet, and Ladakh, are now tributary to Cashmere. These, together with Bhotan, which is partly tributary to Tibet and partly independent, are treated of under "Hindostan."

TOWNS.—LASSA 50 (Mouran, *affl.* San-po), Jiga-Gungar 100, Shigatze or Jikadaze, 100, Teshoo-Loomboo 20, n. (San-po), Tashigong, Gardikh or Gortopé (Indus), Chaprung, Toling, Daba (Sutlej), Bathan or Pa (Kin-cha or Upper Yang-tse-kiang), Tsiamdo (Me-kiang).

Descriptive Notes.—*Lassa* or *H'Lassa*, the capital of Tibet, and the sacred capital of all Buddhistic countries, is a fortified commercial town, containing a Chinese viceroy and garrison, with numerous towers, bazaars, and temples; it is the residence of the Grand or Dalai Lama, the pontifical sovereign of Tibet, who lives in a vast square temple, which, with its precincts, covers many acres, and has contiguous to it four celebrated monasteries, said to be inhabited by 4000 recluses. These monasteries are greatly resorted to by the Chinese and Mongols, as schools of the Buddhic religion and philosophy: the interior of the temple is filled with idols, treasure, and works of art; and there is perhaps no spot on the globe where so much gold is accumulated for superstitious purposes. *Teshoo-Loomboo* or *Chash-lo-um-boo*, the western capital, contains the palace of a lama and the residence of a Chinese functionary, whose duty is to watch the proceedings of the priests, who constitute the great bulk of the population.

Lakes.—Koko-nor and Tcharin-nor, near the sources of the Hoang-Ho; Tengri-nor, 80 miles by 40, and Paltee, in the basin of the Brahmapootra, but having no outlet; Rhawan-Rhad, 15,000 feet above the sea, and Mansarowar, at the source of the Sutlej. Nearly all the lakes are brackish.

Climate.—The climate is excessively dry, and its effect on vegetation resembles that of the dry heat of the Sahara. The trees wither; their leaves may be ground to powder between the fingers; planks and beams break, and the inhabitants cover the timbers of their houses with wet towels, in order to preserve them from the destructive effects of excessive dryness. The timber never rots. The flesh of sheep exposed to the open air becomes dry, and may be ground like bread, and thus preserved for years. This flesh-bread is a very common food in Tibet. Goître, syphilis, ophthalmia, hydrophobia, and small-pox, are among the most prevalent diseases.

The limit of perpetual snow is higher on the Tibetan side of the Himalaya than on the Indian; the former varying in different places from 16,600 to 18,000 feet above the sea, while in the latter it descends sometimes to less than 13,000 feet. Barley comes to maturity from 14,000 to 15,000 feet above the sea-level; wheat succeeds well as high as 12,000 feet; birch to above 14,000 feet; and small bushes to 17,000 feet—being nearly 1300 feet higher than the limit of perpetual snow under the equator.

Minerals.—Tibet is extremely rich in minerals, especially in gold, which is found in lumps, veins, and in the sands of the rivers. Silver, mercury, native cinnabar, iron, and rock-salt, are obtained from mines; but the want of fuel is an insuperable obstacle to their successful operation—coal being unknown, and there being little or no wood in the country. Lapis-lazuli, turquoises, borax, and nitre, are found in great abundance.

Botany.—The vegetation is extremely scanty. Forest-trees are rare, but the cedar is found on the mountains, and several orchard-fruits in the valley of the Mouran, including grapes, figs, pomegranates, peaches, apples, apricots, and nuts. Many of the grasses common in Europe are found; but very little wheat, and less rice, is cultivated. Buckwheat is raised successfully, but grey or black barley is the principal grain cultivated, and the chief article of diet.

Zoology.—Among the animals may be mentioned the yak or grunting ox and the musk-deer (both of which appear to be aboriginal to the country), wild-ox, buffalo, goat, wild-cat, tiger, leopard, lynx, bear, badger, and the argal with horns of 100 lb. weight. All our domestic animals are known in Tibet; but the one most used as a beast of burden is the *bhoral*, a large sheep covered with long hair. Fish are abundant in the rivers, but are prohibited from being eaten by the Buddhist religion.

Ethnography.—The Tibetans belong to the Mongolian race, and, like the Mongols Proper, were at first divided into many independent tribes, who followed a nomadic life. The practice of polyandry is common—one woman becoming the wife of all the brothers in a family.

Their *Language*, sometimes called Tibetan, and sometimes Bhotanta—because spoken also in Bhotan—belongs to the monosyllabic family, though not a few polysyllables exist in it. It bears a great resemblance to the Chinese—some of its roots, and nearly all the derivatives, being clearly traceable to that language. The alphabet, however, is phonetic; reads from left to right, and is without doubt borrowed from the Sanscrit. *Buddhism* was introduced into Tibet about A.D. 367, and that country has for ages been the home and headquarters of the Buddhist faith. Under the name of Lamaism it still exists here in its primitive purity; while the Grand Lama or Supreme Pontiff is regarded as an incarnation of Buddha. He is a temporal as well as a spiritual sovereign; the country abounds with temples, and 80,000 lamas or priests are maintained by the state. The numerous rites and ceremonies are said to bear a most remarkable resemblance to those of the Romish Church.

Commerce, &c.—Tibet became subject to China in 1648, and is now ruled by viceroys from Pekin, in conjunction with the ecclesiastical heads of the country. *Manufactures* of woollens, sacking, and other woven fabrics are pretty general, and much cloth is sent from Lassa into China. The *Traffic* through Tibet is extensive, though the roads and bridges are far inferior to those of China. It is for the most part monopolised by the Government and officers of state. Nepaul and Bhotan derive all their Chinese goods through Tibet.

Table of Rivers and Towns.—The following Table shows in detail the River System of China and the east part of Chinese Tartary. All the basins incline to the Pacific Ocean :—

Rivers.	*Towns.*
Nan-ngan,	Se-ming, Tai-ping.
S. coast, Quang-tong,	Lioo-chow, Lou-chow, n., Kao-chow, n.
Choo-Kiang or Canton River,	Victoria, Macao, CANTON, Fatshan, Chow-king, Oe-chow, Sin-chow, Se-ngen, n., Se-chin, n., Quang-nan, n., Chin-kiang.
Pe-Kiang, *l*.	Chow-chao, Nan-yong.
Quei-Kiang, *l*.	Ping-lo, KWEI-LING.
Ngo-yu,	Chin-ngan.
Lung-Kiang, *l*	Lioo-chow, Kin-yuen.
Tong-Kiang,	Whei-chow.
Han-Kiang,	Tchao-chow, Ting-chow, n.
Fo-Kien channel,	Amoy, Chang-chow, n., Hing-wha.
Min-Kiang,	FOO-CHOW, Yen-ping, Kien-ning, Cha-oo, n.
Coast of Che-Kiang,	Wan-chow, n., Tai-chow, n., Ning-po.
Tsien-tong,	HANG-CHO, Chow-hing, n., Yen-chow, Kin-hao, n., Kin-chow, n., Hoo-chow.
Woo-Sung, and Lake Tai-hou,	Shang-hae, Soo-choo, Kia-hing, Hoo-chow.
Yang-tse-Kiang,	Ching-Kiang, Yang-chow, n., NANKIN, Tai-ping, Nhing-que, n., Chee-chow, NGAN-KING, Kieou-kiang, Han-kow, WOO-CHANG, Han-yang, King-chow, Quei-chow, Choong-king, Sioo-chow, Mahou, Ou-mong, n., Tong-chuen, n., Voo-ting, n., You-gnan, n., Makin.
Kan-Kiang and Lake Po-Yang,	Kieou-kiang, Nan-kang, Yaou-chow; NAN-CHANG, Foo-chow, n., Swi-chow, n., Ki-ngan, Kan-chow, Nan-ngan.
Shang-Yaou,	Quang-sin.
Yu-ho, *l*	Lin-kiang, Yooen-chow.
Han-Kiang, *l*.	Han-yang, Te-ngan, Ngan-loo, Siang-yang, Nan-yang, n., Yun-yang, Han-chong.
Heng-Kiang, and Lake Ton-ting,	Yo-chow, CHANG-SHA, Heng-chow, Yong-chow, n.
Lo-Kiang, *l*	Pao-king.
Yuen-Kiang,	Chang-té, Ching-chow, Tong-gin, n., Se-chow, n., Chin-yuen, n., Ping-yoo, n., Tou-yuen.
Oo-Kiang,	Se-nan, Shi-sien, Sun-y, n., QUEI-YANG, n., Tai-ting, Wei-ning, n., Ching-hiang.
Kia-ling, *l*	Chun-king, Poo-kiang, Long-gan.
Min-Kiang, *l*	Sioo-chow, CHING-TOO.
Tien-chi River and Lake,	YUN-NAN.
Kin-sha,	Ho-king, Yoong-pe, Likiang, Bathan (in Thibet).
Ta-choong, *l*	Yoong-ning.
Hoang-ho or Yellow River,	Hwai-ngan, Quei-te, n., KAI-FONG, Hoai-king, Ho-nan, So-pin, n., Koukou-Kota, n. (in Mongolia), LAN-CHOW.
Hoai-ho,	Fong-yang, Lioo-chow, n., Hing-chow, Yoo-ning.
Wei-ho,	SI-NGAN, Fung-siang, Koong-chang, n., Ping-liang.
Hooan-ho, *l*	Kin-yang.
Fuen-ho, *l*	Pin-yang, Fuen-chow, TAI-YUEN.
Yen-ho,	Yen-ngan.
Tao-Ho,	Ling-tao.
G. of Pe-chi-li,	Teng-chow, Lai-chow, Tsin-chow, n.
Ta-tsin,	Woo-ting, n., TSI-NAN, Tong-chang, n.
Eu-ho,	Tein-sin, Tai-ming, Wei-hoe, or Woee-kiun.
Pei-ho, *l*	PEKIN, or PE-KING, n.
San-kan-ho, *l*	Siuen-hwa, n., Tai-tong.
Hou-to,	Ho-kien, Ching-ting.
Chun-ho,	Chun-te, Quang-ping.
Tae-ho,	Pow-ting.

Rivers.	*Towns.*
Tchang-ho, *l* ..	Chang-te, Loon-gan.
Chan-tou, ...	*Zehol*, Dolonnor.
Leao-ho, ...	MOOKDEN or Chin-yang.
Coast of Yellow Sea, ...	King-chow, Fung-whang-ching.
Kiang-ho, ...	KING-KI-TAO.
E. Co. Corea, ...	Ping-hai.

Rivers.	*Towns.*
Amor, or Saghalien and Shilka,	*Oli*, Saghalien-Oula, BLAGOVESCHANSK, *Yaksa*, *Nertchinsk*.
Soongari, ...	*Petoone*, Kirin-Oula.
Hoorha, ...	*Ningouta*.
Nouni, *l*	*Tsitsikar*, *Noun*, *Merghen*.
Argun, ...	*Argunsk* (in Siberia).

TURKESTAN, OR INDEPENDENT TARTARY.

Boundaries.—N., Siberia and European Russia; W., river Ural and Caspian Sea; S., Persia, Afghanistan, and the Punjab; E., Tibet and Chinese Turkestan, from which it is separated by the Bolor-Tagh mountains. The latitude extends from 35° to 54° N., and the longitude from 51° to 74° E. Tashkend, on the central parallel, has the same latitude as Bordeaux, Turin, Belgrade, Bucharest, Georgievsk, Kirin-Oula, Kingston, and Halifax.

Area and Population.—The area is estimated at 720,000 square miles, and the population at 6,000,000—being six times the area of the British Isles, with a population less than that of Ireland.

Surface.—The surface consists for the most part of an immense plain, which from all sides slopes towards the Sea of Aral, and forms a continuation of the great Siberian plain, from which it is only partially separated by a low chain of hills that connect the Urals with the Altai. A large portion of this plain, including the Caspian, is considerably beneath the level of the Black Sea, and probably formed the bed of the ocean in a remote age. The S.E. part of Turkestan consists of a part of the lofty plain of Pamir, 15,600 feet high. Here are many well-watered and highly fertile valleys, but in general the country is extremely sterile.

Political Divisions.—Turkestan consists of a number of independent states, or *khanats*, as they are called, the principal of which are the following:—

KAFIRISTAN.—Caundeish 3, n., Chittral 4 (Kamah, *affl.* Cabool), Khawak (Punjsheer), Farajghan (Tagoo), Gilgit (Gilgit).

KUNDUZ.—Kunduz 5 (Bunghee, *affl.* Amoo), Khooloom or Tash-Kurghan, 10 (Khooloom), Budakshan (Budakshan).

BOKHARA (including Balkh).—Bokhara 160, Samarcand 10 (Kohik), Kurshee 10, Kesh or Shehri-zoubs (Kurshee), Charjooee 5, Tirmez (Amoo), Balkh 2 (Aderaiah), Hissar (Kafirnihun), Uratepeh 10 (Sagd).

KHOKAN.—Khokan 100, Otrar, Turkestan, n., Tunkat, Tashkend 40, Khojend 50, Marghilan, n., Usch or Taght-i-Soleiman (Daria).

KHIVA, or KHARESM.—Khiva 10, n., Urgenj 3, Kungrad 10 (Amoo), Merv 3 (Muhrgaub), Shurukhs 10 (Tejend).

KIRGHIZ STEPPE.—No towns.

Descriptive Notes.—*Caundeish*, the principal village of Kafiristan or "land of the Kafirs or infidels," the name given to this region by their Mohammedan neighbours, who hold them in the greatest abhorrence. The inhabitants are a remarkable race, greatly resembling the Caucasian in their features, language, and manners; and claim to be brothers of the Feringhi, or Europeans. They live in a rude and primitive state, but exhibit great skill in working metals, and in other arts, and have for ages maintained their independence, though their small territory has been repeatedly overrun by the Mohammedan nations who surround them. *Chittral,* capital of a district subject to Kafiristan, and inhabited by Shia Mohammedans and a few Hindoos. *Khawak,* a celebrated fort and mountain-pass, the most easterly and the best known across the Hindoo-Koosh. By it Timur or Tamerlane entered Hindostan. *Kunduz,* a wretched place, consisting of about 600 mud hovels. *Budakshan* or *Fyzabad,* on an affluent of the Amoo, has acquired great celebrity for its valuable mines of ruby and lapis-lazuli. It was once the capital of an independent sovereignty, and a place of great importance; but in 1832 great part of it was destroyed by an earthquake, and scarcely a vestige of it now remains. The inhabitants are distinguished for their hospitality, and it is said that bread has never been sold in the country. *Bokhara* is a celebrated city, and the only really populous one in the khanat. It has been long famous as a seat of Mohammedan learning, has 360 mosques and as many colleges and schools, with 10,000 students (in 1840). It is a place of very extensive commerce, and merchants from all parts of Asia assemble here. Water is scarce in summer, and of so bad a quality that it gives rise to the terrible disease occasioned by the guinea-worm, which burrows in the flesh of the human body, producing intense pain. *Samarcand,* now an insignificant place, was at one time one of the most famous of Asiatic cities, and the capital of one of the largest empires that have ever existed, viz., that of Tamerlane, whose tomb is enclosed within its walls. The city is regarded with great veneration in Central Asia, and is the entrepôt for a considerable caravan trade. *Balkh,* capital of a province of same name (the ancient kingdom of Bactria), now subject to the Khan of Bokhara, was anciently one of the most flourishing cities of the East, and the emporium of the trade between India, China, and Western Asia. It is styled "the mother of cities," on account of its high antiquity; but the modern town occupies only a fraction of the site of the ancient city, the remains of which cover a space of twenty miles in circumference, the greater part of which is covered with magnificent ruins. The travellers Moorcroft and Guthrie are buried outside the town. *Khokan* (anc. *Ferghana*) has manufactures of silk and cotton tissues, and an active trade in cattle. The khanat is the country of the celebrated Sultan Baber, the founder of the Mogul empire in India. Some miles S.E. of the capital is *Marghilan,* the ancient capital, containing some good buildings and remains of antiquity. *Tashkend,* an important commercial city, with manufactures of silk, cotton goods, and gunpowder. *Khiva,* a miserable-looking place, built of mud, and extremely filthy, is the greatest slave-market in Turkestan. *Merv,* formerly one of the four imperial cities of Khorassan, and the capital of the Persian sultans of the Seljukian dynasty, is now in ruins. The *Kirghiz* country contains neither towns nor villages, though here and there are seen ruins which appear to be the vestiges of a previous race of inhabitants much more advanced in civilisation than the present. The people are almost wholly nomadic, moving with their flocks from place to place, and extremely rude. Indeed, this region may be regarded as the headquarters of barbarism in Asia.

Lakes.—See under "Asia," par. 15.

Climate.—The climate is necessarily very diversified, since the elevation ranges from that of the Caspian, which is eighty-four feet below the level of the Black Sea, to 18,000 feet above it. That of Bokhara, in the south, is, however, described as dry, pleasant, and salubrious, but very cold in winter, when the Oxus is covered with so deep a coating of ice that travellers can easily pass over it. The sky is usually very clear, and of a bright azure colour. Snow lies about three months in the year, and violent tornadoes frequently follow the summer heats, which in June rise to upwards of 100° during the day, and fall to 60° at night. "In general, the seasons in this country may be described thus: spring, sudden and fleeting; summer, dry and burning; autumn, rainy, gloomy, and short; winter, long, dry, and constantly cold."

Minerals.—Gold in the sands of the Oxus; salt deposits numerous; sal-ammoniac in its native state; and mines of rubies and lapis-lazuli.

Botany and Agriculture.—The indigenous plants appear to be few in number: timber is extremely scarce; fruits are excellent and abundant, especially in Bokhara, the melons of which are unrivalled. The principal cultivated plants are rice, wheat, barley, maize, tobacco, hemp, rhubarb. Tillage is almost confined to the banks of the rivers, especially in the Kirghiz steppe, where a little millet, rye, and barley is raised. Mulberry-trees are extensively reared in the S., and silk is produced in great abundance along the banks of the Oxus.

Zoology.—Among the mammiferous animals in the steppes, the Rodentia, especially the mouse, are the most numerous; the buffalo, wild horse, saiga antelope, yak, argali, leopards, wolves, foxes, hares, in Bokhara, Khiva, and Kunduz; bats, tortoises, and lizards in the deserts; scorpions are common, and locusts sometimes infest the country; eagles and hawks are met with, and plovers, wild-pigeon, and waterfowl abound; but there are no singing-birds, and game of all kinds is scarce. Fish is not abundant; those taken in the Oxus are similar to those of other Asiatic rivers, with the exception of an enormous species of dog-fish, called *lukka*, which has no scales, and which sometimes attains the weight of 600 lb. The species found in the Sea of Aral are the same as those in the Caspian, whose fauna is peculiar, but mixed with Black Sea species. (See p. 398.)

Ethnography.—*Turkestan* means "land of the Turks," this country having been the headquarters of the Turkish race from time immemorial. (See under "European Turkey," art. 19.) The northern and south-western parts are inhabited by nomadic tribes (Kirghiz, Turcomans, Uzbecks). Among the settled tribes the most numerous are the Taujiks or Tadjiks, who are supposed to be of Persian or Arabian origin, and speak pure Persian; their religion is Mohammedanism, but Soofeeism or free-thinking also prevails among them. The Kafirs, in Kafiristan, are also Caucasian, and use a Medo-Persian tongue.

Commerce.—The commerce of the country, especially of Khiva and Bokhara, is considerable—their territories being favourably situated in regard to Russia, Persia, Afghanistan, India, and the Chinese empire—and is conducted by means of caravans. Bokhara alone employs upwards of 3000 camels in the trade with Cabool, Herat, and Cashmere. The manufactures are few and unimportant, consisting chiefly of some silk and cotton stuffs, made in the towns, with sabres, knives, and other weapons. The principal exports are cotton, wool, fruits, hides, sheepskins, and silk. Imports comprise muslins, brocades, sugar, shawls, and white cloth from the south; British and other European manufactured goods through Russia; porcelain, tea, musk, rhubarb, from Chinese Turkestan; and wool from Tibet.

Government.—The various governments are despotic, but the khans are obliged to rule in accordance with the principles of the Koran, and they are also influenced by the priests and by public opinion. The military force fluctuates in the various states; in Bokhara it does not exceed 4000 men of all arms, one-third of whom only are fully armed.

River System of Central Asia, or Basin of Continental Streams.—A portion of this immense basin—viz., the minor basins of the Ural, Volga, Kuma, Terek, Kuba, and Kur, all lying W. of the Caspian, have been treated of under "European Russia" (p. 419). The following table embraces the N. and centre of Persia, the N. and W. of Afghanistan, and the greater part of Turkestan. Many of the rivers flow into lakes which have no outlet; the names of the latter are in the table inserted between parentheses.

Rivers.	*Towns.*
N. Co. of Persia,	*Enzeli*, RESHT, *Lahijan*, Amol, n., Balfrush, SAREE, ASTRABAD.
Kizil Ouzan (Caspian), ...	*Lahijan*, Kasbin, n.
Zenjan, ...	Zenjan, Sultania.
Attruck, ...	Koochan or Kabooshan.
Jean or Emba, ..	*Bagantchik*.
Aigi (L. Urumiah),	TABRIZ; on the lake are Urumiah, Maragah, n., Dilman, *Selmast*, n.
Amoo (L. Aral), .	*Urghenj*, Kungrad, KHIVA, n., *Charjooee*, *Tirmez*, Budakshan or Fyzabad, n.
Muhrgaub, *l*...	*Merv* or *Meru*.
Tejend, *l*....	Shurukhs, MESHED.
Heri-rood, .	HERAT.
Kohik, ...	BOKHARA, Samarcand.
Sagd, ...	Uratepeh.
Kurshee, ...	Kurshee, Shehr-i-zoubs.
Adersiah, *l*....	*Tirmez*, Balkh.
Khulum, *l*.....	Khulum or Tash-Kurghan.
Kafirnihan, ..	Hissar.
Kurduz, *l*.....	KUNDUZ, n.; *Ghoree*, *Bamian*.
Budakshan, *l*..	Fyzabad.
Sihoon (L. Aral),	*Fort Aralsk*, *Otrar*, *Turkestan*, n., *Tunkat*, Tashkend, Khojend, KOKAN, Marghilan, n., Usch or Taght-i-Soleiman.
Ili (L. Balkash), .	ILI or GULDJA.
Imil (L. Alaktou Koul), ..	*Tarbagatai*.
Kobdo (L. Ike Aral), ...	Kobdo.
Djabekan, ...	Ouliassoutai, n.
Lake Barkol, ...	*Barkol*, *Khamil*, n.
Yarkand (Lop Nor), ...	YARKAND.
Chayar, *l*.	Chayar, Koulché.
Khotan, ...	Khotan or Ilitchi.
Aksu, *l*........	Aksu, *Ouché*.
Kashgar, *l*	Kashgar.
Helmund (L. Hamoon),	DOOSHAK.
Turnak, *l*......	*Kelat-i-Ghiljie*.
Urghendab, .	CANDAHAR.
Kash-rood, ...	*Khash*, *Bakwa*, *Sakhir*, n.
Furrah-rood, ...	*Laush*, Furrah.
Haroot, ...	*Subzawur*.
Heri-rood (lost in the sand),	HERAT.
Ghuznee (L. Abistada), .	Ghuznee.
Bundamir (L. Bakhtegan) ..	*Istakhar*.
Kurab	*Murghab*.
Rocknabad (lost in sand)	SHIRAZ.
Zendarood (lost),	Ispahan.
Kara-su (lost), ...	Hamadan, n.
Kehveh (lost), ...	TEHERAN, n.

SIBERIA.

Boundaries.—N., the Arctic Ocean; W., European Russia, from which it is separated by the Ural Mountains; S., Independent Turkestan and Chinese Tartary; E., the Pacific Ocean. Lat. 49°—78° 25′, lon. 60°—190° E., or 170° W. Yakutsk, the commercial capital of Eastern Siberia, near the centre, is in the same latitude with the Färoe Isles, Trondhjem, Onega, Cape Navarin, and Julianshaab in Greenland.

Area, 5,393,250 square miles. Population, 2,887,184. Of the same size as the Chinese Empire, and half as large again as Europe, its population does not exceed that of Scotland. Extreme length from the Urals to Behring Straits, 3600; breadth, 1800 miles.

Surface.—A vast lowland plain, gently sloping towards the Arctic Ocean, and watered by numerous gigantic rivers which flow in that direction. The surface is so low that Tobolsk, the W. capital, 350 miles from the ocean, is only 128 feet above its level, and Yakutsk, in the E., rather more distant, only 287 feet. The rivers, through a great part of the year, flow under a thick covering of ice, and, owing to their slight fall, readily overflow their banks, and inundate extensive portions of their basins. By far the greater part of the soil is sterile, but the mountain chains in the S. are clothed with forests and interspersed with many fertile valleys. The valley of the Amoor, in particular, is highly fertile.

Political Divisions.—Siberia is divided by the Russian Government into two great divisions—viz., Western and Eastern Siberia, the respective capitals of which are Tobolsk and Irkutsk. Western Siberia comprises the two governments, Tobolsk and Tomsk. Eastern Siberia includes the two governments, Yeniseisk and Irkutsk; the provinces, Saghalien and Yakutsk, the former of which, consisting of the lower basin of the Amoor, was recently acquired from China; the districts, Okhotsk and Kamtchatka; and the country of the Tchukchees, which is almost wholly independent. The portions of Perm and Orenburg, lying E. of the Urals, have been treated of under European Russia.

WESTERN SIBERIA.

TOBOLSK.—Tobolsk 16, Tara 5, Omsk 11 (Irtish), Kurgan 5 (Tobol), Tiumen 10, Turinsk 4 (Tura), Ishim 3, Petropaulosk 6 (Ishim), Berezov, Surgut (Obi).

TOMSK.—Tomsk 18, Kuznitsk 4 (Tom), Narim 2, Kolyvan, Barnaul 5, Bijsk 4, Zmeinogorskoï 4, n. (Obi), Semipolatinsk 3 (Irtish), Kainsk 3 (Om).

EASTERN SIBERIA.

YENISEISK.—Krasnoiarsk 6, Yeniseisk 6, Abakansk (Yenisei), Butchansk (Angara).

IRKUTSK.—Irkutsk 20, Balagansk (Angara), Barguzinsk (L. Baikal), Udinsk 3, Selenginsk 3, Kiachta 5, n. (Selenga), Nertchinsk 20 (Shilka), Argunsk (Argun).

SAGHALIEN.—Blagoveschensk (confluence of Zeya and Amoor), Oli, Saghalien Oula 20, Yaksa (Amoor).

YAKUTSK.—Yakutsk 5, Veluisk Olekminsk, Jijansk (Lena), Aldanska (Aldan), Nijni-Kolimsk (Kolyma), Zachiversk (Indigirka).

OKHOTSK.—Okhotsk 1 (Okota), Ijighinsk, Kamenoï-Ostrog (Jijiga).

KAMTCHATKA.—Petropaulovski 1, Nijni-Kamtchatka (E. coast).

TCHUKCHEE COUNTRY.—Ostrovnoï (Aniuy), Anadirsk (Anadir).

Descriptive Notes.—*Tobolsk* is the principal place in Western Siberia and the chief centre of its commerce. It is mostly built of wood, and contains a monument to Yermak, the founder of Russian influence in Siberia; it has an extensive trade with China and Bokhara, consisting chiefly of furs, tea, silk, corn, cattle, and fish. *Omsk*, formerly capital of a government of same name, which is now divided between Tomsk and Tobolsk, is the seat of government for the gradual subjugation of the Kirghiz, with whom it maintains a considerable trade in furs, brandy, and tobacco. Virtually it is still the capital of Western Siberia, being strongly fortified, and the most important military station on the Irtish. *Tiumen*, a depôt for the commerce between Russia and China, contains upwards of 100 factories of russia leather, woollen fabrics, soap, &c. *Tomsk*, on the road between Tobolsk and Irkutsk, is the principal place in the mining district of the Altai, and the seat of a military school, which is attended by about 400 students. *Kolyvan*, in the vicinity, has valuable mines of lead and gold. *Bernaul*, the seat of a mining board and the chief smelting-place for the ores of the Altai, contains a magnetic and meteorological observatory, erected in 1841. *Krasnoiarsk*, a small town built of wood, but important as the emporium of a wide region, and as containing a fine collection of Siberian antiquities. *Yeniseisk* has a great annual fair and an extensive trade in furs and Chinese produce. *Irkutsk*, noted for the beauty of its situation and the refinement of its inhabitants—many of whom are merchants and government officers—is the grand emporium of the Russian commerce with China; the scenery along the river to Lake Baikal is said to be almost unrivalled. *Kiachta*, till lately the only place on the frontier where the Chinese Government allowed its subjects to trade with Russia. *Nertchinsk*, the headquarters of the chief penal settlement in Eastern Siberia, where the worst criminals are sent, and compelled to work in the lead and quicksilver mines. *Blagoveschensk* is the residence of the governor of the territory lately acquired from China; it is a small place, surrounded by palisades, with a citadel and a few mud cottages. At a short distance from the town, and on the right bank of the Amoor, the Chinese fleet lies at anchor, consisting of twelve large one-masted boats, and carrying from four to five tons each. *Saghalien Oula* or *Aigunt*, on the right bank of the Amoor, and 20 miles from the mouth of the Zeya, is a rich and populous place, and carries on an extensive trade in furs. *Yakutsk*, the centre of the fur trade of Eastern Siberia: it also carries on an important traffic in ivory obtained from the walrus of the Arctic Ocean, and the fossil remains of the mammoth and rhinoceros found imbedded in the frozen soil of the northern shores. *Okhotsk*, the principal station of the Russo-American Company, and the entrepôt of the Russian trade with Kamtchatka and Russian America. *Petropaulovski* (pronounced *Petropaulski*, and signifying "Port of Peter and Paul") is the capital of the district Kamtchatka, and the principal Russian military station in this remote region. It was bombarded by the Anglo-French fleet in October 1854. *Ostrovnoï*, the principal village belonging to the Tchukchees: here is held a great annual fair in February.

Capes.—See under "Asia," p. 445.

Islands.—Kurile Isles, S.W. of Kamtchatka; Aleutian Isles, between Kamtchatka and the Peninsula of Aliaska; Clark's Island or St Lawrence, in Behring Straits; Bear Island, N.W. of the Tchukchee country; New Siberia or Liakhov, N. of prov. Yakutsk.

The *Kurile Isles*, twenty-five in number, extend between Kamtchatka and Japan, to the latter of which the southernmost three belong. Total area, 3070 square miles. Population uncertain. Surface mountainous, with numerous volcanoes, some of which rise to 6000 feet in elevation. The *Aleutian Islands* pertain also to Russia, though geographically they belong rather to the New World than to the Old. The population, which amounts to upwards of 8000, subsists by hunting and fishing–vegetation being scanty and agriculture almost unknown. They are rocky and volcanic, and have some volcanoes in constant activity. Chief exports, otter, fox, and other skins, the trade in which is monopolised by the Russo-American Company. *New Siberia* consists of a group of islands in the Arctic Ocean off Cape Sviatoï, in Yakutsk, to which government they belong. Lat. 73° 12′—76° 20′ N.; lon. 125° 50′. The principal islands are Kotelnoï, Fadievskoï, New Siberia, and Liakhov. They were discovered by Hedenstroem in 1809, and are mountainous, sterile, and uninhabited.

Seas, Bays, and Gulfs.—See under "Asia," p. 446.

Lakes.—Baikal, in government Irkutsk; Tchany, Sumi, and Oubinsk, between Tomsk and Tobolsk; Piasini and Yevsievsk, in government Yeniseisk.

Lake Baikal, 14,000 square miles in area, and the largest sheet of fresh water in the Old World, is nearly half as large as Lake Superior, and more than twice the size of Lake Ladoga. It is drained by the Augara, a tributary of the Yenisei, and lies at an elevation of 1419 feet above the sea. It is the seat of valuable seal, sturgeon, and herring fisheries, and forms part of the great line of communication between Russia and China, but it is frozen from November to May. The other lakes mentioned are all very large, but there are numerous smaller ones, some of which are fresh and some salt.

Climate.—The climate is intensely cold during winter, which lasts nine months, but very warm during the brief summer. The lower basin of the Lena is the coldest known region on the globe. The mean temperature for January at Yakutsk, in this basin, and almost exactly in the centre of Siberia, is 45° 5′ below zero; while that of July, the hottest month, is 68° 8′—showing a differance of 114° of temperature between the hottest and the coldest month. Here mercury remains frozen from two to three months in the year; breathing becomes difficult, and the reindeer hides himself in the depths of the forest and stands motionless. The heat of the summer penetrates the soil only to a depth of about 3 feet, beneath which it remains permanently frozen. Erman found, by sinking a well, that the frozen stratum extended to the depth of 400 feet at Yakutsk, but in other places it is much less. The rivers are covered for many months with a thick coating of ice; and the country being almost a dead level, and the upper courses of the rivers melting earlier in summer than the lower, much of their lower basins becomes inundated.

Minerals.—Siberia yields to no country in the world for the riches and variety of its mineral productions.

There are three extensive mining districts—viz., 1. Those of the Urals, on the E. declivity of which they occupy an area of about 40 miles wide, and yield great quantities of iron, gold, and copper, with some silver and platinum. 2. The mining district of Barnaul in Tomsk, yielding auriferous silver and copper, but less lead. The mines here lie mostly in the Altai Mountains, which are also rich in cornelian, onyx, topaz, amethyst, and other gems. 3. The district of Nertchinsk, peculiarly rich in lead, quicksilver, tin, zinc, and iron. Here are also celebrated mines of emerald and topaz, found generally in connection with tin. The total produce of gold from the Altai Mountains, in the ten years previous to 18[illegible]6, was £18,761,310. The other principal minerals are salt, found in natural crystals on the banks of some lakes; jasper and porphyry of great beauty, in the Altai Mountains; lapis-lazuli, near Lake Baikal; diamonds, found occasionally on the eastern slope of the Urals; and malachite, containing copper and mica in the form of large plates, extensively used as a substitute for window-glass.

Botany.—Enormous forests of coniferous and other trees extend from the Altai Mountains to the Polar Circle; a few bushes, willows, and saline plants form the principal vegetation of the *steppes* in the W.; while in the dreary region of the *tundras*, N. of the Arctic Circle, are found only the dwarf willow, mosses, and lichens.

The principal cultivated plants are rye, barley, and oats, which rarely ripen beyond the lat. of 60°. Wheat is grown in some places in the basin of the Irtish, and buckwheat and millet in various localities. Flax, hemp, tobacco, turnips, pease, beans, potatoes, cabbage, onions, radishes, mustard, and even cucumbers and pumpkins, are raised in considerable quantities; but fruit-trees do not succeed anywhere except in the lower basin of the Amoor.

Zoology.—Siberia is also very rich in its wild animals, especially the fur-bearing species, as the sable, ermine, marmot, marten, beaver, squirrel, and fox, the skins of which form an important article of commerce. Other wild animals are the white and black bear, the reindeer, elk, wolf, and glutton. The rivers swarm with fish, among which may be mentioned the sturgeon, salmon, and herring; while millions of gallinaceous and aquatic birds visit the woods and lakes.

Ethnography.—About two-thirds of the population of Siberia consist of exiles and convicts from European Russia, who, to the number of about 10,000 annually, are sent hither either to work in the mines or to colonise the country. Owing to change of climate and other causes, one-fifth of them die during the first ten years.

The Samoiedes in North Siberia, between the Ural Mountains and the Lena, are in all probability the earliest inhabitants of Northern Asia. From an extensive list of Samoiede words, collected by Pallas and Klaproth, it appears that their language more closely approximates to the Finnish than to any other known tongue. They are an extremely ignorant and degraded race; their religion is Shamanism, one of the grossest forms of idolatry; and they depend for their precarious subsistence on hunting and fishing. The term "Samoiede" denotes one who eats salmon. The Yukagirs, Koriaks, Tchukchees, and Kamtchadales occupy the remainder of Northern Siberia, from the Lena to the Pacific. They lead a wandering life, and subsist by fishing and the chase, though many of them possess large flocks of reindeer. In winter they live in huts below the level of the ground, with only a single aperture for the admission of light and air; while their summer residences consist of rude huts formed of the trunks of trees, with a covering of bark. Buddhism and Paganism are the prevalent forms of belief, though a few profess a corrupted form of Christianity. South of these, and occupying the immense region of South-eastern Siberia, between the Upper Yenisei and the Sea of Okhotsk, are found the Tunguzes, about 52,000 in number, who are closely allied in origin to the Mantchoos of Chinese Tartary. Their language differs considerably from that of the Mantchoos, having a considerable admixture of Mongolian terms, and being extremely rude and barbarous. The Tunguzes are fire-worshippers, but a few of them have been baptised. South-western Siberia, between the Yenisei and the Ural Mountains, is mainly occupied by the Ostiaks and Wogulians, two nations of Turkish origin, professing the Mohammedan religion, speaking dialects closely allied to each other and belonging to the Finnish family of tongues. The Buriats, a Mongolian tribe, dwell chiefly on both sides of Lake Baikal, and are the most numerous of all the Siberian tribes. They are said to number about 150,000 individuals; their dialect is closely allied to the Calmuck, and is the same as that spoken by the Khalka tribes in Eastern Mongolia. A tribe of Calmuck Tartars peoples the Altai Mountains, immediately to the W. of the Buriats.

Education and Commerce.—Siberia has a few educational establishments in Tobolsk, Tomsk, Yeniseisk, and Irkutsk, but they are still in their infancy. The manufactures are insignificant, except in the mining districts and in some of the provincial capitals, where are government foundries. Tobolsk has tanneries and some manufactures of soap, and at Irkutsk is an imperial factory of woollens for the clothing of the troops. The commerce is of considerable extent, consisting chiefly of the exportation of the produce of the mines, together with furs, skins, cattle, fish, mammoth bones, morse teeth, and caviare, in exchange for which tea, silk, porcelain, paper, rhubarb, and salt are imported.

River System of Siberia.—The following table, in continuation of that given under Chinese Tartary, embraces the rivers and towns of Northern Asia, from the Amoor to the Oby:—

Rivers.	*Towns.*
Amoor, ...	(See under "Chinese Turkestan.")
Okota (Sea of Okhotsk),	OKH
Jijiga, ...	*Ijeghinsk*, *Kamenoi-Ostrog.*
E. Co. of Kamtchatka, ...	PETROPAULOVSKI, *Nijni-Kamtchatka.*
Anadir, ...	*Anadirsk.*
Aniuy, ...	OSTROVNOÏ.
Kolyma, ...	*Nijni-Kolimsk.*
Indigirka, ...	*Zachiversk.*
Lena, ...	*Jigansk*, *Ust-Veluisk*, YAKUTSK, *Olekminsk*, *Vitimsk*, *Kirensk*, *Verkholensk.*
Viloui, *l*	*Verknei-Veluisk.*
Aldan, ...	*Aldanska.*
Olonek, ...	*Olensk.*
Yenisei, ...	Yeniseisk, KRASNOIARSK, *Abakansk.*
Angara and Lake Baikal,	*Butchansk*, *Balagansk*, IRKUTSK, *Barguzinsk.*
Selenga, *l* ..	*Ilinsk*, *Udinsk*, Selenginsk, *Kiachta*, *Maimatchin.*
Orkhon, ..	*Karakorum*, OURGA, n.
Obi, ...	*Berezov*, *Surgut*, *Narim*, *Kolyvan*, *Barnaul*, Bijsk.
Irtish, *l*	TOBOLSK, *Tara*, Omsk, *Semipolatinsk.*
Tobol, *l*	Tobolsk, *Kurgan.*
Tura, ...	Tiumen, *Turinsk.*
Taghil, ..	Nijni Tagilsk (in Perm).
Ishim, *l* ..	*Ishim*, *Petropaulosk.*
Om, ...	Omsk, *Kainsk.*
Tom, ...	TOMSK, *Kusnitsk.*

JAPAN.

Boundaries.—W., the Sea of Japan and the Strait of Corea, separating it from Chinese Tartary ; N., E., and S., the Pacific Ocean.

The Japanese empire, including Jesso, the Great Kuriles, the Loo-Choo Isles, and the southern portions of Corea and Saghalien, extends from latitude 26° to 49° N., and from longitude 129° to 150° E. Jeddo, the capital of the empire, situated almost exactly in the centre of its area, lies in the same latitude as Gibraltar, Malta, Cyprus, Teheran, Cashmere, and Tse-nan (in Northern China), and as Monterey and Cape Hatteras in the United States.

Area and Population.—The area is estimated at 266,500 square miles, the population at from 30,000,000 to 40,000,000. This population is nearly the same as that of the British Isles, but the area is more than twice as large.

Surface.—The greater part of the empire consists of an elongated archipelago subdivided into a series of minor groups, Japan Proper being in the centre. This archipelago is traversed throughout its greatest length by a chain of mountains of considerable elevation, some of which attain the snow limit, and many are active volcanoes, as Fusi, 12,450 feet high, and Siro-Jama, 8000 feet, in the island Niphon. The remainder of the surface, though bold, is not rugged, and the majority of the hills are cultivated to the summit. Tremendous earthquakes are common, but Europeans are very imperfectly acquainted with the interior.

Political Divisions.—The empire embraces Japan Proper, which consists of four large islands, and the Loo-Choo Isles : it is divided into 8 provinces, which are subdivided into 68 departments and 622 districts. The principal islands, with their chief towns, are as follow :—

NIPHON.—Jeddo or Yedo 2000, Simoda, Orogawa 20, Kanagawa, Uraga, Quano 15, Mia 15, Miako 500, Nara, Osaki or Osaca (south coast), Nêé-é-gata (west coast).

SIKOKF.—Tosa, Ava or Awa (east coast), Iyo, Sanuki (west coast).

KIUSIU.—Nagasaki 100, Saga (west coast), Kagesima (south coast), Founai, n., Kokura 16 (north coast).

JESSO.—Matsmai 50, n., Hakodadi 7 (south coast).

LOO-CHOO.—Sheudi, Napa (Great Loo-Choo Island).

Descriptive Notes.—JEDDO, capital of the empire and the residence of the secular emperor, was, till very recently, little known to Europeans, all foreigners having for centuries been jealously excluded from entering the bay, in consequence of the perfidy of the Portuguese, who about the middle of the 16th century abused the privileges conferred on them, and attempted an insurrection. In 1853, Commodore Perry, commanding an American squadron, steamed up the bay to within sight of the capital, in spite of the most earnest remonstrances on the part of the Japanese officials ; and in August 1858, Lord Elgin, the British Ambassador, performed a still more daring exploit, by landing and marching through the city to the imperial palaces, demanding the emperor's signature to a treaty of commerce with Great Britain. (See p. 525.) He describes the city as equal to London in extent, and not far behind it in population : one of the streets, he declares, is ten miles long, and as closely crowded with houses as between Hyde Park corner and Mile End. Immediately behind this is the aristocratic quarter, containing the residences of about 360 petty hereditary princes. Some of their mansions are so large as to be capable of containing 10,000 retainers. For ten miles around the city were extraordinary evidences of an advanced civilisation. The people were clean, well dressed, amiable in their disposition, and extremely polite and courteous. No beggars were seen in the streets; the country was everywhere rich and fertile, and almost unequalled in the beauty of its scenery. *Orogawa* or *Uraga*, the port of Jeddo, and a place of considerable importance, from the complete command it has over the trade of the capital, of which it forms the key. Here Commodore Perry had his first interview with the Japanese officials in 1853, and here his squadron lay at anchor during his negotiations for a commercial treaty with the United States. *Quano* and *Mia*, two thriving towns on the Gulf of Mia, carrying on a brisk trade. *Miako*, a large and populous city, the ecclesiastical capital of the empire and the residence of the Mikado or spiritual sovereign, to whom the secular emperor is nominally subject. It is said to be the principal manufacturing city in the empire, and the chief seat of its literature. Here is an ecclesiastical seminary, in which the Japanese priests receive their education. Miako is about 4 miles long and 3 broad, and though less populous than Jeddo, it far surpasses it in beauty. It abounds in temples, palaces, and exquisitely laid out gardens, and is regarded as the paradise of Japan. The houses are built of wood, plastered with lime and clay, usually two stories in height, and formed into long and narrow, though very regular streets. Carved ornaments, japanned wares, and other articles are made here, of a kind and quality far superior to anything that is allowed to be exported to Europe. *Nara*, 25 miles N.E. of Miako, the ancient residence of the emperors of Japan, is stated to be a highly flourishing city. *Osaki* or *Osaca*, on the S.E. coast of Niphon, was the port of Miako, and one of the five imperial cities, till destroyed by the fearful earthquake of December 1854, which also seriously injured Simoda, and was felt along the whole east coast of Japan. *Tosa* and *Awa*, populous cities on the east coast of Sikokf, and capitals of provinces of the same name, have never been visited by Europeans. *Nagasaki*, the principal seaport and commercial emporium of Japan, on the east side of the island Ximo or Kiusiu, has, for the last two centuries, been the only place at which foreigners were allowed to trade. *Sanga* or *Saga*, a large and populous city, situated in a well-watered plain at the northern extremity of the large bay of Simabarra, and capital of the fertile province of Fisen, possesses considerable trade. *Matsmai*, a large, fortified, and commercial city, with a commodious and well-sheltered harbour, contains numerous temples, theatres, and various other edifices, which are usually painted white. *Kakodadi*, or more correctly *Hakodadi*, one of the towns at which the ships of the United States, England, France, and Russia, are allowed to trade. Commodore Perry visited this place with his squadron in 1854. He describes it as bearing a striking resemblance to Gibraltar, both in position and appearance. *Sheudi*, the capital, and *Napa* the principal port, of the Loo-Choo group, which forms a sort of outpost to Japan, though owning a qualified subordination to China. The inhabitants are described by Commodore Perry, who visited the islands in May 1853, as far advanced in civilisation, and as bearing the closest resemblance to the Japanese in language, customs, laws, dress, virtues, and vices. The Americans are now allowed to trade here.

Capes.—Chichakoff, the S. extremity of the island Kiusiu; King, the S.E. extremity of Niphon; Soya, the N. extremity of Yesso.

Islands.—Besides the numerous islands constituting Japan Proper, the following are more or less subject to the Emperor:—

Loo-Choo Islands, between Japan and Formosa (principal, the Great Loo-Choo, 65 miles long and 15 broad); Kunashir, Iturup, and Urup, the three most southerly of the Kurile Isles; and the southern half of Saghalien.

Seas and Straits.—Sea of Japan, between Japan and Chinese Tartary; Strait of Corea, between Japan and Corea; Bungo Channel, between Kiusiu and Sikokf; Sangar Strait, between Niphon and Yesso; Strait of La Perouse, between Yesso and Saghalien.

Lakes.—Oitz or Biwano, 40 miles long, near the city Miako; Lake of Kosimah, near the E. coast of Niphon.

Climate.—Much milder than the corresponding latitude on the neighbouring continent, owing to the influence of the surrounding ocean; but the W. side is considerably colder than the E., on account of the proximity of Asia. In the S. the thermometer ranges between 29°

and 104° Fah.; but in the N. the cold is so intense in winter as to compel the savage Ainos to take refuge in caverns. Rain is very frequent, and the country is often visited by hurricanes and fearful earthquakes, while volcanic eruptions of the most formidable character are by no means rare.

Geology.—Little is known of the geological formation of the country, save that it abounds with volcanoes, which form its most characteristic feature. One of these, a huge cone, four times the bulk of Ben Nevis, is said to have been formed in the third century of our era. The irruption of another destroyed twenty villages about seventy years ago; while a third sunk beneath the sea, but continues to emit boiling water. The volcanoes greatly affect the tides: in some parts of Japan there is only one tide in the twenty-four hours, while in other parts there are three.

Minerals are very numerous and abundant, comprising gold, silver, lead, tin, copper, diamonds and other gems; amber, sulphur, nitre, salt, lime, marble, and plastic clay, in various parts. Whole mountains of porcelain earth are met with, and thermal and mineral springs frequently occur. The precious metals are very abundant, but iron is scarce. Coal is very plentiful, and is largely exported to China, where it supplies a large section of the inhabitants with winter fuel. The mode of mining is very rude, and performed by women and children in a state of nudity. Some of the richest coal-mines belong to Russians.

Botany.—Japan embraces the principal portion of Schouw's sixth Phyto-geographic Region, sometimes called the *Japanese Region*. Its flora is very varied, and appears to occupy a middle place between that of Europe and of North America. It has a considerable affinity to the flora of India, and is more tropical than European. In the south are found palms, bananas, bamboos, bignonias, myrtles, and cypresses; in the north, oaks, pines, firs, the maple and ironwood-tree; while the varnish and camphor trees are said to be indigenous. Some of the timber is highly prized for shipbuilding. The principal cultivated plants are tea, cotton, rice, sugar-cane, tobacco, ginger, pepper, hemp, wheat, barley, buckwheat, soy, melons, pumpkins, and cucumbers. Rice yields two harvests annually, and constitutes, with fish, the chief food of the people. The vegetable-wax tree, the silk and paper mulberry, and the cotton-tree, are held in high esteem. Radishes are sometimes found, by a peculiar mode of cultivation, as large as the body of a man; while other plants are dwarfed to an almost incredibly small size.

Zoology.—The Zoology of Japan is very imperfectly known to Europeans; but among the wild animals are monkeys, bears, boars, hyenas, foxes, weasels, deer, hares, rats, and mice. The fox is worshipped as a divinity by the most intelligent men in the country. Birds are found in great variety, and include the falcon, pheasant, teal, stork, pigeon, wild-goose, duck, quail, curlew, plover, snipe, raven, pelican, crane, and heron. Reptiles, especially snakes, lizards, and tortoises, are numerous; and the seas abound with fish, which are taken in great quantities. Corals, pearls, and ambergris, are also obtained. The domestic animals are few; elephants, camels, asses, and mules, are unknown; the horse is used only for the saddle, buffaloes and oxen being the animals employed for draught and burden; but it is contrary to law to use their flesh as meat. Sheep and pigs are few; dogs and cats innumerable.

Ethnography.—The Japanese are probably of the Mongolian race, with some admixture of Malay blood; but it remains very uncertain from what country they migrated, as they have been located in their present insular home from time immemorial. They do not resemble the Chinese in physical structure, language, or ancient religion.

Dr Macgowan, who has recently paid great attention to the ethnology of Japan, regards the people as a mixture of the Caucasian, Kamtchatkan, and several other races. They are small in stature, the average height of the men being five feet four inches. The eyes are black, hair coarse, complexion sallow, hands and feet very small. After marriage the women blacken their teeth and pluck out their eyebrows. The Japanese, Loo-Chooan, and Corean *Languages* are very closely allied to each other: they are phonetic, polysyllabic, and, to some extent, inflexional, and thus differ widely from the Chinese; yet, on the whole, they have so many affinities with the Tauranian or Ugro-Tartarian family of languages, that they must, at least provisionally, be classed under that stock. The Japanese has several terms in common with the Mongolian and Finnish; very many Chinese words, greatly modified in pronunciation, have been introduced, partly by Chinese colonists, but more especially by the influence of Chinese literature, on which all the learning of Japan is based. The Japanese have a written literature, some science, and a taste for music. Their ancient *Religion* was the Sinto or Sin-sin ("doctrine of spirits"), so called because consisting chiefly in the adoration of numerous spirits supposed to preside over all things, whether in the visible or invisible world. But in the sixth century Buddhism was introduced, and now the great bulk of the inhabitants conform to it, while a few have adopted the doctrines of Confucius.

Government.—The Government of Japan consists of a federal oligarchy (composed of the princes of the 126 feudal states of the empire), with a temporal and a spiritual sovereign. The temporal emperor possesses a veto power over the Council; while the authority of the spiritual sovereign extends to all matters connected with religion and education. His influence is quite subordinate to that of the civil emperor, but he enjoys the privilege, such as it is, of having twelve wives. The feudal nobles are the governors of the different provinces of the empire.

Commerce, &c.—Japan has, like China, kept itself aloof for ages from other nations: some trade is allowed with Chinese merchants, who bring broadcloth and other stuffs to Nagasaki, in return for coal, sea-slugs, copper, and lacquered wares; and the Dutch are permitted to send two ships annually to the same port with wax, camphor, spices, ivory, lead, iron bars, quicksilver, glass wares, &c., for which they receive in return copper, silk, pitch, and Japanese manufactures.

No commerce has hitherto been allowed with other foreign nations; but in 1854 a general convention of peace and amity was signed between Japan and the United States, by which the ports of Nagasaki, Simoda, and Hakodadi were opened to the ships of the latter for trade and protection; and consuls from the United States were allowed to reside in Japan. In the following year similar privileges were accorded to England, France, and Russia. These privileges were still further extended in 1858—Lord Elgin, the British Ambassador, having entered Jeddo, and obtained from the emperor a liberal treaty of commerce, which secures the advantages of an unfettered commerce to all nations at the following ports—viz., Hakodadi, Nagasaki, Kanagawa, and Née-é-gata, or another harbour on the W. coast of Niphon; while from 1st January 1862, British subjects may reside at Yedo, Osaca, and Hiego The law which forbids intercourse with foreign nations compels the Japanese to draw on their own resources; and the empire is nearly independent of external aid. In manufacturing industry they are quite abreast of the Chinese, and in some rural arts they are unrivalled, as in the dwarfing of forest-trees, and in raising radishes and other bulbous roots of an enormous size; while their sword-blades, telescopes, clocks, silk and cotton fabrics, porcelain, lacquered and japanned ware, are particularly excellent. In some of these arts the Japanese have attained such perfection that even Europeans may gain some useful hints from them. Among their most important productions are insect wax, camphor, silk, tea of a superior quality, flax, hemp, and tobacco.

AFRICA.

1. **Boundaries.**—N., the Mediterranean Sea ; W., the Atlantic Ocean ; S., the Southern Ocean ; E., the Indian Ocean, Red Sea, and Isthmus of Suez, which unites it to Asia.

Africa extends from lat. 37° 20′ N. (Ras-al-Krun) to 34° 50′ S. (Cape Agulhas) ; and from lon. 17° 42′ W. (Cape Verd) to 51° 22′ E. (Cape Guardafui) ; and thus embraces 75° of lat. and 69° of lon. Its exact centre, 2° N. of the equator, and 7° E. of the Bight of Biafra, is in the same lat. as Quito, the mouth of the Amazon, and the centre of the islands Sumatra and Borneo, and in the same lon. as Stockholm, Breslau, Vienna, Cape Spartivento, Lake Tchad, and Cape Town. Its N. extremity is on the same parallel as San Francisco, Cape Charles, the Azores, Cape St Vincent, Athens, Lake Urumiah, Astrabad, and Yarkand ; and its S., as Monte Video in Uruguay, and Adelaide in South Australia.

2. **Form and Dimensions.**—In form it resembles a pear, with a large indentation on the western side, and a corresponding projection on the eastern. The extreme length from N. to S., which is nearly equalled by the extreme breadth, falls little short of 5000 miles. The coast-line is estimated at 16,000 miles, or 1 mile of coast to every 710 miles of surface ; while Europe has 1 in 220 miles, America 1 in 490, and Asia 1 in 520. This single fact goes far to explain the past history of Africa : shutting herself up from the sea on all sides, she has ever remained isolated from the rest of the world, and little influenced by those social or political revolutions that have so powerfully promoted civilisation in the other continents of the eastern hemisphere.

3. **Area.**—Great uncertainty still attaches to the area of Africa, but it is usually estimated at 11,376,000 square miles, being about three times the area of Europe with its islands, or two-thirds that of Asia. The aggregate area, however, of the explored portions, as contained in the following table, is only 9,785,000 square miles.

4. **Population.**—The population is equally uncertain, but it is generally supposed to be from 60,000,000 to 80,000,000. The former estimate would assign it less than one-fourth the population of Europe, and only two and a fourth times that of the British Isles, or about 5 persons to each square mile ; while Asia has 38, and Europe 70 persons. Recent travellers, however, who have penetrated far into the interior, have found many places far more densely peopled than they were understood to be, so that 100,000,000 is probably nearer the truth than either of the foregoing estimates. This would give nearly 9 persons to each square mile.

5. **Political Divisions.**—As much of the continent remains unexplored, and as the political relations of many of the barbarous nations lying south of the Sahara are continually fluctuating, the actual number of independent states cannot be specified with any degree of accuracy. The annexed table, however, embraces all the really important divisions, though not a few of the designations employed are rather geographical than political.

TABLE OF AFRICAN STATES.

Name and Position.	Area in Eng. Square Miles.	Population.	Capital or Chief Town.	River, &c., on which the Capital stands.	Population of Capital.
North-Eastern Africa, embracing—					
Egypt, N.W. of Arabia,	58,000	2,895,500	Cairo	Nile	250,000
Nubia and Kordofan, S. of Egypt,	300,000	400,000	Khartum	White Nile	15,000
Abyssinia, S. of Nubia,	245,000	4,500,000	Gondar, &c.	Lake Dembea	7,000
Northern Africa, or Barbary States—viz.,					
Tripoli, W. of Egypt,	200,000	2,000,000	Tripoli	Mediterranean	16,000
Tunis, W. of Tripoli,	72,000	2,500,000	Tunis	Mediterranean	180,000
Algeria, W. of Tunis,	90,000	2,561,000	Algiers	Mediterranean	52,000
Marocco, W. of Algeria,	290,000	8,500,000	Marocco	Wady Tensift	80,000
The Sahara, S. of Barbary States,	2,500,000	100,000	Mourzook, &c.	An Oasis	4,000
Senegambia, S.W. of the Sahara,	250,000	5,000,000	Bathurst, &c.	Gambia	3,000
Soudan or Nigritia, E. of Senegambia,	2,500,000	10,000,000	Timbuctu, &c.	n. the Joliba	20,000
Upper Guinea, S. of Soudan,	360,000	10,000,000	Coomassie, &c.	Dah, *affl.* Chama	18,000
Lower Guinea, S.E. of Upper Guinea,	240,000		Banza-Congo, &c.	n. the Zaire	20,000
Southern Africa, including—					
Country of the Hottentots, S. of Lower Guinea,	240,000 ?	..	Barmen, &c.	Swakop	..
Cape Colony, Natal, and Kaffraria,	240,000	1,000,000	Cape Town, &c.	Table Bay	24,000
South-Central Africa, N. of Cape Colony,	1,000,000 ?	..	Linyanti, &c.	Chobe, *affl.* Zambezé	7,000
Eastern Africa, N. of Natal,	1,000,000	10,000,000	Mozambique, &c.	Chan. of Mozambique	6,000
Madagascar, E. of Mozambique,	200,000	4,000,000	Tananarivo, &c.	Centre of the island	25,000

6. **Surface and Mountains.**—A great plain occupies the N., from the Mediterranean to Mount Atlas, and from the Atlantic to the Red Sea. S. of Mount Atlas is the Sahara, or Great Desert, an immense sandy waste, but presenting great diversity in its physical configuration, some parts being low and flat, while in others it consists of table-lands and mountains. The region of Nigritia, about the same size as the Sahara, consists, so far as known, of an immense plateau of from 1000 to 3000 feet in elevation. The basin of Lake Tchad, however, is less than 1000 feet high; but the region between the Joliba and its affluent the Tchadda rises in Mount Mindif to 6000 feet. S. of Nigritia the Kong Mountains, and the so-called Mountains of the Moon, form an immense wall, separating Northern from Southern Africa. In Upper Guinea it is of moderate elevation, usually not more than from 2000 to 3000 feet; near the sources of the Tchadda, Mount Alantika rises to the height of 9000 feet; eastward of this are the Donga Mountains, whose elevation is unknown. Proceeding eastward, we arrive at the mountains of Abyssinia, one of which, Ras Detschen, is 15,986 feet high, and Abba Jarret 14,707 feet. Still further eastward, in the Somauli country, Jeb-Ahloor-Singally attains an elevation of 16,500 feet, and the range terminates at Cape Guardafui, after traversing the entire breadth of the continent. Between this range and the basin of the Zambezé the interior of Africa remains almost wholly unexplored; but there is reason to believe that it consists of a table-land of considerable elevation, as several of the principal rivers of Africa—the White Nile, the Zaire, and the Zambezé—have their origin in it, and as it is bounded on the E. and W. by the loftiest mountain-ranges of the continent. The recent travels of Dr Livingstone have thrown much light on the extensive tract of country lying between the Orange River and the tenth degree of S. lat. This region is occupied for the most part by the immense basin of the Zambezé in the N., and the Desert of Kalahari in the S., both of which are a continuation of the unexplored plateau which lies on both sides of the equator. The former has an elevation varying from 4000 feet to 2500 feet, and is separated from the latter, on its western side, by the Omatako Berg, in the Damara Land, 8739 feet high. Lake Ngami, in the Kalahari Desert, has an elevation of about 2000 feet. It is a curious fact, ascertained by Livingstone, that both the Zambezé and Zaire, two of the largest rivers of Africa, and flowing in opposite directions, have their origin in the same little lake (Dilolo), which has an elevation above the sea of only 4000 feet. There are no extensive low-lying plains in Africa, such as occur in other quarters of the globe, with the exception of the basin of Lake Tchad, 830 feet above the sea-level; the oases and some waterless depressions of the Great Desert, some of which are below the ocean-level; the basin of the lately discovered Lake Tanganyika, which has an elevation above the sea of 1800 feet; and certain parts of the coast, especially the deltas of the Nile, Senegal, Gambia, Rio Grande, and the Quorra or Niger.

7. **Isthmus and Capes.**—Isthmus of Suez, uniting Africa with Asia, 72 miles broad; Cape Ras-al-Tyn, N.E. of Tripoli; Bonn and Ras-al-Krun, N. of Tunis; Spartel, N. of Marocco; Cantin and Nun, W. of Marocco; Bojador and Blanco, W. of the Sahara; Verd and Roxo, W. of Senegambia; Palmas, Three Points, and Formosa, S. of Upper Guinea; Lopez and Negro, W. of Lower Guinea; Good Hope and Agulhas, S. of Cape Colony; Corrientes, S.E. of Sofala; Delgado, N.E. of Mozambique;

Guardafui, the most E. point of Africa; St Mary and Amber, the S. and N. extremities of Madagascar.

8. **Islands.**—The islands are arranged for the most part in groups or small archipelagoes. *In the Mediterranean,* Jerbah and Karkenah, E. of Tunis. *In the North Atlantic,* Azores, Madeira, Canary and Cape Verd Islands. *In the Gulf of Guinea,* Fernando Po, Prince's Island, St Thomas, and Annabona. *In the South Atlantic,* Ascension and St Helena. *In the Indian Ocean,* Madagascar, Mauritius Group or Mascarene Islands, Comoro, Zanzibar, Amirantes, Seychelles, Socotra.

The *Azores, Madeira,* and *Canary Isles* have been described at pp. 216, 217. The *Cape Verd Islands,* situated 320 miles west of Cape Verd, form an archipelago of ten principal and several smaller islands—all of which belong to Portugal; area, 1680 square miles; population, 85,393. The ten largest islands are Sant' Antonio, Santo Vicente, Santa Luzia, Santo Nicolao, Sal, Boavista, Maio, Sant' Iago, Fogo, and Brava. They are all of volcanic origin, and Fogo, which is 9157 feet in elevation, still emits much smoke. The soil is moderately fertile; the absence of trees and the scarcity of water cause frequent and severe distress. The climate is very hot, but it is tempered by the sea breezes. The chief products are maize, rice, French beans, coffee, cotton, tobacco, and fruits. Turtles are numerous on the coasts, where amber is also abundant. *Fernando Po, Prince's Island, St Thomas,* and *Annabona,* all in the Bight of Biafra, are mountainous, beautiful, and fertile, yielding rice, sugar, and tropical fruits. Fernando Po and Annabona belong to Spain, the other two to Portugal. Clarence Peak, in Fernando Po, has an elevation of 10,000 feet. *Ascension Island* and *St Helena,* both belonging to Britain, are situated far out in the Atlantic, the former about 500 miles S.S.E. of Cape Palmas, and the latter nearly 1200 miles E.S.E. of Cape Lopez. Ascension is retained as a station at which ships may touch for stores, on their passage to and from Cape Town and the East Indies; area, 35 square miles; population, 400; capital, Georgetown. St Helena is of volcanic origin, and consists of rugged mountains interspersed with numerous ravines, in one of which stands Jamestown, the capital; area, 48 square miles; population, 7000—about one-half of whom are whites. Only one-fifth of the surface is fertile, yielding the products both of European and tropical countries. The climate is mild and very healthy. It was ceded to the East India Company by Holland in 1673. St Helena is chiefly noted as the place of exile of Napoleon Buonaparte, from 1816 to his decease in 1821. His remains were exhumed and removed to Paris in 1840. *Madagascar,* the largest island of Africa, and the sixth largest in the world, is situated in the Indian Ocean, east of the Portuguese possessions, from which it is separated by the Channel of Mozambique, 240 miles wide. It extends from latitude 11° 57′ to 25° 38′ S., and from longitude 43° 20′ to 50° 31′ E. The area is estimated at 200,000 square miles, or more than four times the size of England without Wales; and the population at about 4,000,000, being less than one-fourth that of England. It is divided into numerous small states, all of which are tributary to one sovereign, whose capital, Tananarivo, situated on a lofty plateau, near the centre of the island, is said to contain 25,000 inhabitants. Tamatave, the chief commercial town, is situated on the coast N.E. of the capital. Other towns are Fort Dauphin, Manambatoo, Mananzari, Andevoranto, Port Louis, and Port Luke, all on the east side of the island. A chain of mountains traverses the island in the direction of its greatest length: the highest summit, Ankaratra, near the capital, attains an altitude of about 11,000 feet. Minerals are abundant, especially gold, silver, copper, lead, iron, and coal. The iron is mined to a considerable extent, and the coal is employed in smelting it. The climate is hot and extremely unhealthy to Europeans, especially along the coasts. The soil is very fertile with rich pasturage and magnificent forests, which contain a great variety of beautiful and useful trees. Wild animals are few in number, consisting chiefly of lemurs (a species of ape peculiar to this island and the Comoro group in its vicinity), the ounce, wild-dog, wild-cat, and fox. Birds and crocodiles are very numerous, and locusts—which enter the island from the south-west—visit it periodically, and cause much damage to the vegetation. Domestic animals comprise the bison, sheep, swine, dog, and cat. Silkworms are reared, and honey and wax are obtained in great abundance in the woods. The chief vegetable productions consist of medicinal plants, pepper, cotton, indigo, sugar-cane, tobacco, rice, and manioc. The principal articles of export are the native products now enumerated, while the imports consist of linen, ribbons, glass, and Spanish piastres. The inhabitants are of diverse races—some of them resembling the Malays, while others possess the black skin and woolly hair of the negro. Their religion is a rude species of polytheistic idolatry; and the monarch is the high-priest as well as the despotic ruler of his subjects. The prevailing language, which is called Malagasse, bears no resemblance to those of the opposite coast of Africa; but is very similar in construction and forms to the Tagala, the most perfect of Polynesian dialects. Christianity was introduced for the first time in 1818, and the Scriptures have since been translated into Malagasse. Under the late king, Radama, the missionaries were protected, civilisation introduced, the slave-trade abolished, and schools establised; but since his death in 1828, a disastrous change has taken place. The profession of Christianity is prohibited under severe penalties, the missionaries expelled, and many of the converts massacred. The *Mauritius Group*, or *Mascarene Islands*—so called from the Portuguese navigator, Mascarenhas, who discovered Bourbon in 1545—consists of three islands, Bourbon, Mauritius, and Rodriguez. The first-named, also called Ile de la Reunion, 400 miles E. of Madagascar, has been a French colony since 1649; area, 905 square miles; population, in 1854, exclusive of its dependencies, Nossi Bé, Mayotta, and the small island St Marie, near Madagascar, 172,264, of whom only 30,000 are whites. The capital, St Denis, lies on the north side of the island. It is of volcanic origin, and its highest mountain, Piton de Neiges, 10,100 feet high, is an extinct volcano. Piton de la Fournaise, an active volcano, is 7218 feet high. The climate has recently undergone a great change for the worse. The annual fall of rain is, on an average, 128 inches, and the mean temperature 77° Fah. Terrific hurricanes are common, and cause great destruction. The soil is fertile, producing sugar, coffee, cloves, maize, rice, and tobacco, which, together with dye-woods and saltpetre, form the principal exports. No venomous serpents are found in the island. *Mauritius*, also called *Isle of France*, situated 115 miles N.E. of Bourbon, was discovered by the Dutch in 1595, and received its name in honour of Prince Maurice of Holland. It was occupied by the French from 1713 to 1810, when it came into the possession of Britain. Area, 700 square miles; population, 162,000—of whom 10,000 are whites, and the remainder negroes and hill coolies. It is mountainous, thickly wooded, and well watered. The climate is healthy, the mean temperature at Port Louis, the capital, is 78°; but being situated in the hurricane region of the Indian Ocean, it is subject to destructive tempests. The soil is rich in the valleys, producing wheat, maize, yams, and manioc. The principal product, however, is sugar, which, since 1848, has greatly failed, from an insect attacking the canes. The sugar-plantations cover an area of 101,000 acres, and the crop of 1847 was estimated at 65,000 tons. In 1855 the imports were valued at £1,356,000, and the exports at £1,848,000. The principal exports are sugar, coffee of excellent quality, and ebony, which is considered the finest in the world. Mauritius and Rodriguez are remarkable as having been habitats of the Dodo, which the Dutch navigators extirpated about the middle of the seventeenth century. *Rodriguez*, situated 300 miles E. of Mauritius, of which it is a dependency, has an area of about 188 square miles, and a population of 250. It has about 9000 acres of cultivable land. *Comoro Isles*, a group of volcanic islands, at the northern entrance of the Mozambique Channel; the principal, named Comoro, is 90 miles in circumference, and contains 30,000 inhabitants, who speak the Arabic language, and profess the Mohammedan religion. They are governed by native sultans, but Mayotta, one of their number, was ceded to France in 1841. They are of volcanic origin, mountainous, and fertile in tropical productions. Their chief exports are cocoa-nut oil, and tortoise-shell. A British Consul has been recently appointed. *Zanzibar* and *Pemba*, off the coast of Zanguebar, are fertile, densely peopled, and tributary to the Sultan of Muscat, who has his capital, Shanganny, in the former island. (See under "East Africa.") *Amirantes* and *Seychelles*, two groups of islands in the Indian Ocean, under the jurisdiction of Great Britain, the former consisting of 11 islets, about 900 miles E. of Zanzibar, and 300 miles N.N.E. of Madagascar, and the latter of about 30 islets, situated a short distance to the N.E. of the Amirantes. They are of granitic formation, are surrounded with numerous rocks, and are of little importance. The Amirantes are destitute of water, but are visited by the inhabitants of Mauritius for the land-turtles with which they abound. The Seychelles are elevated on a coral bank; population, 7000. Mahé, the largest of the group, is 16 miles long and 4 miles broad. The chief town, Port Victoria, contains a garrison of 100 men. *Socotra*, 100 miles E. of Cape Guardafui, is a dependency of Keshin, a petty state of Arabia, about 240 miles distant. The area is estimated at 1000 square miles, and the population at 5000, who are mostly Bedouins. It has been long famous for its aloes, dragon's blood, and other gums, tamarinds, tobacco, dates, millet, and ghee. Socotra is the *Dioscoridis Insula* of Ptolemy, and is mentioned by Arrian.

9. **Seas, Bays, Gulfs, and Straits.**—Mediterranean Sea, between Africa and Europe; Gulf of Sidra or Sert (*Syrtis Major*), between Barca and Tripoli; Gulf of Cabes (*Syrtis Minor*), E. of Tunis; Strait of Gibraltar (*Fretum Herculeum*), between Marocco and Spain; Gulf of Guinea, between Upper and Lower Guinea; Bights of Benin and Biafra, on the W. and E. sides of the delta of the Niger; Table Bay, S.W. of Cape Colony: Mozambique Channel, between Mozambique and Madagascar; Gulf of Aden, Strait of Babelmandeb, Red Sea, and Gulf of Suez, between Africa and Arabia.

10. **Mountains and Table-Lands.**—(See under the article "Surface," and under the countries in which they are respectively situated.)

11. **Rivers.**—As much of the interior of Africa remains unexplored, no table of river-basins, similar to those given under "Europe" and "Asia," can yet be prepared. They may, however, be arranged into four systems, corresponding to the four great basins to which they belong—viz., the Mediterranean basin, the Atlantic basin, the basin of the Indian Ocean, and the continental basin, or basin of Lake Tchad.

1. BASINS INCLINED TO THE MEDITERRANEAN.—The *Nile* is the only great river belonging to this basin. The recent researches of Burton and Speke in Eastern Africa, render it all but certain that the White Nile or Bahr-el-Abiad has its origin in Lake Nyanza, on the equator (lon. 32° 47′ E.)—an immense sheet of water, 3750 feet above the sea. The river first flows in a north-easterly direction for about 600 miles, when it probably unites with a large affluent from the W. named Bahr-el-Ada; then proceeding northward through Kordofan, Senaar, and Meroe, it meets first the Sobat, and then the Blue Nile or Bahr-el-Azrek, at Khartum, in Nubia. Its only other important tributary is the Atbara or Tacazze, from Abyssinia, which joins it on the right. The total course of the Nile is estimated at 3000 miles, and the area of its basin at 520,000 square miles. 2. ATLANTIC BASIN.—The *Senegal*, from Bambarra, 1000 miles long, pursues a N.W. course, and falls into the Atlantic in the N. of Senegambia. The *Gambia*, from the Tengui Mountains, flows W.N.W. for 1000 miles, and falls into the Atlantic at Bathurst. The *Rio Grande*, from Footajallon, flows W. to the Atlantic; length, 400 miles. The *Queorra*, *Joliba*, or *Niger*, from the Kong Mountains, in the S.W. of Bambarra, flows N.E. to Timbuctu, and then S.E. to the Bight of Benin; total course, about 2000 miles. The *Congo* or *Zaire*, in Lower Guinea: length unknown, and source uncertain; but the Casai or Lokè, supposed to be one of its head waters, rises in Lake Dilolo, lat. 11½° S., lon. 22¼° E., flows first N. and then W., and falls into the Atlantic, after a course of upwards of 1000 miles. The *Orange River*, between the country of the Hottentots and Cape Colony, rises in the Kashan Mountains, and flows W. to the Atlantic, after a course of nearly 1000 miles. 3. BASIN OF INDIAN OCEAN.—The *Zambezé* or *Secheke*, an immense river of Eastern Africa, explored by Livingstone in 1856, rises in Lake Dilolo (which also gives origin to the Congo, flowing westward), lat. 11½° S., lon. 23½° E.. It first receives the name of Leeba, which flows S.S.E. for about 200 miles, where it is joined on the left by the Leeambye from the N.E., which is supposed to have its origin in Lake Shuia, and which may turn out to be the main stream. Flowing S. 150 miles, and S.E. about 200, it receives the Chobe from the S.W., an immense river rising in the direction of Benguela and the Damaras country; about 40 miles E. of the confluence of the Chobe, Dr Livingstone discovered the Victoria Falls, where the river, now about half-a-mile wide, rushes over a precipice 100 feet deep, after which it flows for the next 30 miles in a channel not exceeding 20 yards in width. About 300 miles below the Falls, the Zambezé receives the Kafue, another large affluent, on the left bank; and, about 140 miles farther down, it is joined by the Loangwa, flowing from the N. Flowing E. and S.E. for about 400 miles more, it finally reaches the ocean, after a total course of about 1430 miles. In many places it is fully a mile wide, and near its mouth it forms a magnificent delta. In common with the other large rivers

of Africa, as the Nile, the Zaire, and the Niger, the Zambezé is characterised by periodic inundations. 4. Basin of Lake Tchad.—The *Yeou*, from near Jacoba, flows N.E. 300 miles; and the *Shary*, from Dar Kulla, flows N.W. 350 miles into Lake Tchad.

12. **Lakes.**—The lakes of this continent are both numerous and extensive, but many of them are as yet imperfectly known to Europeans.

In the basin of the Nile are *Menzaleh*, *Bourlos*, and *Birket-Mariouth* (Mareotis), three salt-water lagoons in the delta; *Birket-el-Karoon* (Mœris), in Middle Egypt, communicating with the Nile by the Canal of Joseph; *Dembea* or *Tzana*, in Abyssinia, 60 miles long by 40 broad, drained by the Bahr-el-Azrek; and Victoria Nyanza, the probable source of the White Nile, on the Equator, about 300 miles long by 90 miles broad, and 3740 feet above the ocean level. About 240 miles S.W. of Lake Nyanza is Lake Tnaganyika, called also Uniamesi and Ujiji, discovered by Burton and Speke in 1858. It is about 330 miles long, by from 30 to 40 miles broad, and consists of an insulated depression into which streams flow on all sides; yet the waters are perfectly fresh, and fish are abundant. Its banks are grazed by red oxen of large size—the *tsetse* fly, the scourge of the more southern region traversed by Dr Livingstone, being here unknown. The surface of the lake is 1850 feet above the sea level; it is situated between lat. 3° 10′ and 7° 30′ S., lon. 29½° to 30½° E., and is about 600 miles from the eastern coast of Africa. *Al Sibkah*, a great salt lake in Tunis, not drained. *Melgig* and *Al-Shot* in the S. of Algeria. In the basin of the Senegal is *Lake Kayor*, drained by the Sokham. The only important lake in the basin of the Niger is *Lake Debo*, 200 miles S.W. of Timbuctu. In the centre of Nigritia are lakes *Tchad* and *Fittré*, the former of which is the largest in Africa; area, about 15,000 square miles; height above the sea, 850 feet; water sweet, but undrained. In South Africa are the recently discovered lakes *Ngami*, 2000 feet above the sea, and *Kumadan*, both of which are fresh and undrained. In the basin of the Zambezé are Lake Dilolo, drained by the Lotembwa, an affluent of the Leeba, the principal tributary of the Zambezé, and probably *Lake Shuia*, drained by the Moshingushe; and *Lake Ruena*, drained by the Luambesi, other large affluents of the same river. The only important lakes near the E. coast are *Maravi* or *Kilwa*, midway between Mozambique and Lake Tanganyika, and *Lake Batti*, in Magadoxo, which receives the river Haines.

13. **Climate.**—Africa is distinguished from all the other great divisions of the globe by its high temperature and general deficiency of rain. These characteristics mainly depend on its position and configuration.

Situated for the most part within the tropics, with the equator passing through its centre, it is more exposed to the vertical rays of the sun than any other continent; while the absence of deep inlets of the ocean and the prevalence of lofty mountain-ranges along the coasts, prevent the cool sea breezes from penetrating into the interior. Accordingly, this portion of the continent, more especially Senegambia and other parts of the western coast, have been found more unhealthy to Europeans than any other region of the globe: here the most deadly fevers prevail, and the strongest constitutions are not proof against the pestilential influences of the moist and heated atmosphere. On the other hand, Southern Africa, and especially the recently explored desert of Kalahari, is more favourable for the recovery of persons afflicted with pulmonary complaints than any other region of the earth's surface. Another prominent feature of the climate of tropical Africa is the division of the year into the dry and rainy seasons, which in most places succeed one another with undeviating regularity. Within the tropics, the rains follow the course of the sun—the rainy season occurring within either half of the torrid zone as that luminary approaches the zenith. Upon the N. side of the equator the tropical rains extend to the southern border of the Sahara; but in Nubia they reach as far N. as the 18th parallel. Beyond the tropics, the rain falls in either hemisphere at the period when the sun is on the opposite side of the equator—that is, in the winter of those latitudes. The winds which bring the heaviest rains in tropical Africa are called *monsoons*, and come from the Indian Ocean. They continue from April to October; but, from Mozambique to the equator, the rainy season is during April, June, and July. The climate of North Africa is greatly affected by the position of the Atlas range of mountains. Between this range and the Mediterranean the country is well watered; but between Mount Atlas and the northern limit of the tropical rains, scarcely any rain falls during the year. In Upper Egypt also no rain falls for several years in succession.

The same phenomenon also occurs in South-Western Africa, between Lake Ngami and the Orange River—a region now known as the Desert of Kalahari. The mean annual temperature of the greater part of inter-tropical Africa is 79° Fah.; but in Eastern Nigritia and Abyssinia, or the region extending from Lake Tchad to the Red Sea, it is as high as 81°. In Northern Africa, from Sierra Leone and Fezzan to the Mediterranean, the mean annual temperature varies from 79° to 68°, as also from the river Zaire to Cape Colony. The highest mean temperature hitherto observed in any part of the globe, 87°.3, occurs at Massouah in Abyssinia; while the highest summer temperature occurs in a tract which extends through the centre of the Sahara and across the desert lying between the Nile and the Red Sea, where the thermometer frequently rises to 113° even in the shade.

14. **Geology.**—The geology of Africa remains as yet in an extremely imperfect state; but, so far as known, *Crystalline and Igneous Rocks* prevail over the whole southern half of the continent, from the Kong Mountains and their eastern continuation to Kafraria and Natal; as also, in North-Eastern Africa, between the Nile and Red Sea. *Primary and Transition Rocks* occupy an extensive tract in South-Western Africa, between the Cape of Good Hope and the northern limit of the Namaqua country, together with two smaller areas in Senegambia and Dahomey. *Secondary Rocks* form the prevailing strata over the entire region north of the chain of Mount Atlas, extending eastward as far as the Nile; and occur also in extensive patches in Fezzan, Kordofan, Kanem, Bambarra, Sierra Leone, and the Gold Coast. *Tertiary and Alluvial strata* cover, so far as known, the remainder of this continent, especially the Sahara, Soudan, and two long narrow belts, one along the Mediterranean coast, from the south of Tunis to the eastern frontier of Egypt, and the other along the Atlantic coast, from the mouth of the Zaire to Cape Town. *Volcanic Rocks* are supposed to cover an extensive area in the unexplored regions of Central Africa, as well as a considerable part of the surface of Abyssinia.

15. **Minerals.**—Africa appears to be more deficient in minerals than any other continent, and very few mines are wrought.

Gold is obtained in considerable quantity in certain parts of Senegambia and Upper Guinea, in Nigritia, Mozambique, and Abyssinia; silver is rare, but is found in Marocco and Abyssinia; copper in the Atlas range, in Nigritia, East Africa, Cape Colony, and the basin of the Zambezé; lead and antimony in Mount Atlas; iron in many places, especially in Algeria, Abyssinia, Nigritia, and Cape Colony. Salt is found in many localities, and forms the most valuable mineral product of this continent. A chain of salt-water lakes skirts the southern base of the mountains of Barbary; and abundance of saline deposits, as the nitrates of potash and of soda, meets the traveller in South Africa, in the form of a thick encrustation on the surface of small lakes. Coal has been found recently in Mozambique.

16. **Botany.**—The botany of Northern Africa is similar to that of the south of Europe, and has been already treated of under that continent. —(See p. 87.)

The remainder of the continent is embraced within Schouw's 13th, 14th, and 23d Phyto-geographic Regions (see p. 56). The first of these is the *Desert Region*, and embraces the Sahara, characterised by an extremely scanty flora, consisting of a few prickly shrubs and grasses, except in the oases where the date-tree, corn, and some vegetables are cultivated. The 14th region is that of Tropical Africa, or Adanson's Region. It extends from the fifteenth degree of north latitude to the Tropic of Capricorn, and from the Atlantic to the east side of Madagascar—thus embracing the whole region visited by periodical rains. Of this immense region the interior is little known, and the remainder, though possessing a luxuriant and gorgeous flora, is neither rich in species nor in peculiar forms. In general, however, it is characterised by the presence of the baobab, the largest known tree: the *Leguminosæ*, *Rubiaceæ*, and *Cyperaceæ* are also very prevalent. The eastern part, including Madagascar, has a peculiar flora, distinguished by the genera *Danais*, *Ambora*, *Dombeya*, and others. Abyssinia is the native region of the coffee-shrub. In Guinea are found the butter-tree, the gum-tree, the African teak, the caoutchouc, cabbage, mahogany, and mangrove trees, the acacia, cactus, and cassia. In the basin of the Zambezé the principal vegetable products are coffee, vines, sugar-cane, cotton, and flax; and the inhabitants cultivate wheat, manioc, yams, millet, &c. The 23d region, or that of Southern Africa, between the Tropic of Capricorn and the Cape of Good Hope, will receive attention when we come to treat of Cape Colony, Natal, and Kafraria.

17. **Zoology.**—This continent forms the third great zoological kingdom of naturalists (see p. 58), and is distinguished from all others by the richness and variety of its fauna. Nearly all the species of animals found in the Old World are here represented in their best varieties.

MAMMALIA.—Of the 1704 species of known mammalia, about 446, or considerably more than one-fourth of the whole, are found in this continent; and what is still more remarkable, no fewer than 399 species are peculiar to it. (See table of Distribution of Mammalia, p. 59.) In this respect it is distinguished from all the other zoological kingdoms, with the exception of Central and South America, where the ratio of peculiar species is still higher. Of its 63 species of *Quadrumana* only one occurs in any other continent—viz., the Barbary ape, which is also found on the Rock of Gibraltar. Monkeys, baboons, apes, and lemurs abound in every part of the continent where palm-trees are numerous; but the most remarkable animal of this order is the chimpanzee of the western coasts, which approaches nearer the human form than even the ourang-outang of Eastern Asia. The *Carnivora* comprise 174 species, of which 151 are peculiar. They are in general highly ferocious and formidable to man. At the head of these stands the lion, of which there are three varieties—the Barbary, Senegal, and Cape lions. The tiger does not occur in Africa, nor have any bears been found; while the wolf and jackal are nearly confined to the region north of the Sahara. Leopards, panthers, and hyenas, are numerous over the whole continent; as also the civet, which is prized for its perfume. The ichneumon is widely distributed, and one species frequents the valley of the Nile, where it is found useful in destroying the eggs of the crocodile and other reptiles. The *Marsupialia* are the only order of mammals which have no representation in Africa. The *Rodentia* are 104 in number, of which no fewer than 94 are peculiar, comprising various species of jerboas, rabbits, hares, squirrels, rats, and mice. The *Edentata* comprise 6 species, all of which are peculiar. The 18 *Pachydermata* are, with one exception, all peculiar. First in rank amongst these stands the elephant, which is found in all parts of the continent south of the Great Desert. It attains to a great size, and is of a different species from the Asiatic elephant. Its flesh is held in much esteem, while the tusks constitute one of the principal articles of export. The rhinoceros, which is hunted for its hide and horns, frequents the same haunts as the elephant. The hippopotamus, an animal peculiar to Africa, where it exists in two species, frequents all the larger rivers, especially the Zambezé, the Zaire, the Niger, the Senegal, the Gambia, and the upper course of the Nile; its teeth consist of the finest ivory, for the sake of which it is hunted by the Cape colonists. The engallo, or wild-boar, differs from the European species, while the zebra, quagga, and dow, which abound in the centre and south, are all peculiar to this continent. The *Ruminants* are greatly more numerous than in any other part of the world of equal extent—there being no fewer than 65 species, nearly all of them being peculiar; and the recent researches of Livingstone, Barth, and others, have added greatly to the number. The antelopes alone are said to amount to 34 species. The camelopard, or giraffe, is peculiar to this continent, and extends from the Orange river to the Sahara. Buffaloes abound in Southern and Central Africa, several species being found in the basin of the Zambezé. The one-humped camel traverses the dreary desert regions, while sheep, goats, and deer are numerous in the centre and south. Of the 16 *cetaceous mammals*, 7 are proper to the seas and coasts of this continent—the most remarkable of them being a species of whale called lamantin, which is supposed to be the original of the fabulous mermaid.

BIRDS.—The birds of Africa are far less numerous than the mammals, there being only 164 species north of the Sahara, 211 in Tropical, and 229 in Southern Africa. Among the most remarkable species are the ostrich—the geographical distribution of which is nearly co-extensive with this continent, though corresponding species are found in Australia, South America, and the Indian Archipelago. Its feathers form a highly-valued article of traffic, the plumes being much in request in Europe for ladies' head-dresses Its flesh, when young, is palatable, and its eggs are considered a delicacy. The vulture, owl, falcon, and eagle are among the birds of prey; the Guinea-fowl among the gallinaceous birds; the ibis and flamingo among the waders; the songsters are 43 in number, while the climbers include numerous varieties of parrots, cuckoos, and kingfishers.

REPTILES of every order are to be found in this continent. The land-tortoises are chiefly confined to it; and though the serpents are few in number, the species that exist seem very widely spread. The huge python is found in the swamps and morasses of the west. Of the 208 species of known saurians, 24 are found in Barbary, and 28 in Egypt, Nubia, and Abyssinia. These include crocodiles, geckos, iguanos, monitors, true lizards, and skinks. The true crocodiles are peculiar to this continent, as are the gavials to Asia, and the alligators or caymans to America. The common crocodile of the Nile is distributed over the whole river district; and though it is no longer found in the delta, it is abundant in the Thebaid and in the whole upper course of the river.

INVERTEBRATA.—Africa is peculiarly rich in insects. Of these the locusts are the most remarkable, having been from time immemorial the scourge of the country. Hardly less formidable are the termites or white ants, which swarm in countless myriads in tropical Africa. In the basin of the Zambezé, and many other localities in the S. and E., there is a venomous fly, called the tsetse, whose bite is fatal to nearly all domestic animals.

18. **Ethnography.**—The people of Africa belong to a greater number of distinct races than those of any other continent. Much obscurity still attaches to many parts of the subject, but, so far as our present knowledge extends, they may be all traced to a few leading groups.

SYRO-ARABIANS.—Northern Africa, including the Sahara, and extending from the valley of the Nile to the Atlantic, is peopled by nations belonging to the Syro-Arabian stock. It includes the native population of the Sahara, of the greater part of the country to the N. of it, and of the Canary Islands. It consists of three main sections—viz., the Amazirg or Berbers, who are also called Kabyles, and are descended from the ancient Gætulians. They occupy the Atlas range, the oases of the desert, and the intermediate region, and are subdivided into two main sections—the Tibboos in the E. and the Tuaricks in the W. The next branch is the Moors, the descendants of the ancient Mauri, Numidæ, and other kindred tribes, who inhabit the cities and towns of the maritime region, but they are a more mixed race than the Berbers, owing to the incursions of the Romans, Vandals, and Turks, who at different times subjugated the country. The third branch consists of the Arabs, who are found chiefly in Fezzan, and who entered the country under the standard of the Mohammedan chieftains. (See pp. 63, 454.)

NEGROES.—Central Africa, extending from the Sahara to the Zambezé, and from the Atlantic to the Blue Nile, is occupied by the Negro race, to which the vast majority of the population of this continent belongs. (See p. 63.) They are divided into a great number of distinct nations, and constitute many powerful states, the principal of which will be noticed under Senegambia, Guinea, and Soudan. Central Negroland presents a multitude of languages and dialects, which have relations with each other sufficiently marked to induce us to regard them as being of one common origin. Dr Krapf gives them the name of the Nigro-Hamitic group, indicating that they are spoken by the descendants of Ham, and that the principal nations employing them are located in the great basin of the Niger.

HOTTENTOTS AND KAFFRES.—Southern Africa embraces two leading races—the Hottentots and Kaffres. The former are confined to the S.W. angle of the continent, extending from Cape Negro to Cape Agulhas, and penetrating into the interior to the desert of Kalahari, where they come in contact with the Bechuanas, who, according to Livingstone, are a branch of the Kaffre nation, as is also the great Makololo tribe in the upper basin of the Zambezé. The Hottentots or Bushmen are a nomadic people, never cultivating the soil nor rearing any domestic animal, save some wretched dogs, and deriving their subsistence from roots and beans and the flesh of game. They form, indeed, one of the most degraded sections of the human race, and are proverbial for their deformity, which, however, has been much exaggerated. Some fifteen divisions of this family are said to be now extinct; the principal existing tribes are the Gonaqua, Koraqua, Namaqua, the Dammaras, and the Saabs or Bosjesmans. The great Bechuana or Kaffre nation occupies the entire remainder of Southern Africa—living N. and E. of the Hottentots, and extending, in some places, from sea to sea. On the western side of the continent they are found extending from the equator to Cape Negro, and on the eastern from Cape Colony to the frontiers of the Galla and Somauli country, in the vicinity of Cape Guardafui. They greatly differ from the Hottentots in physical appearance, language, manners, and modes of subsistence. They are described as a fine, athletic race, frequently as handsome as Europeans; they are an agricultural people, tilling the ground, and engaged in pastoral pursuits. (See under "East Africa" and "South-Central Africa.")

Nilotic Class.—The north-east corner of Africa, between the Nile and Upper Egypt, is occupied by what Dr Krapf calls the "Nilotic Class of Nations," who form an intermediate link between the Syro-Arabian and Negro stocks. This class includes the Somauli, Galla, and Afer or Danakil—pastoral tribes, situated to the E., S., and W. of Abyssinia; the Agows, of Western Abyssinia; and the Nubians, of Nubia and Dongola. The Copts, who form a portion of the inhabitants of Egypt, and who are the genuine descendants of the ancient Egyptians, are a native African race, and cannot be classified under any of the foregoing divisions. (See under "Abyssinia.") For a fuller description of the physical and mental characteristics of the Negro variety of mankind, we refer the student to p. 63.

EGYPT.

Boundaries.—N., the Mediterranean; W., Tripoli and the Libyan Desert; S., Nubia; E., the Red Sea, Gulf of Suez, and a line drawn from the town of Suez to the small river El Arish, which separates Egypt from Palestine. Egypt occupies the N.E. angle of the continent, between the Mediterranean and the Tropic of Cancer, or between the parallels of 23° 50′ and 31° 35′ N., and the meridians of 25° and 34° E. Cairo, the capital, is in the same latitude as New Orleans, Basorah, Mooltan, and Ning-po; and in the same longitude as St Petersburg, Odessa, Kutaya, and Port Natal.

Area.—Uncertain, but probably not exceeding 150,000 square miles. The habitable portion of the country, however, does not amount to one-twelfth of this, being confined to the delta and valley of the Nile, and a few fertile oases on its western and eastern sides, amounting in all to about 12,000 square miles. From the mouth of the river to the falls of Assouan in Upper Egypt, the extreme length is 520 miles; breadth of the delta, at its mouth, about 160 miles; and the average breadth of the valley above the delta, from 7 to 8 miles.

Population.—Estimated in 1856 at 2,895,500, or a little more than that of Scotland, and giving 240 persons to each square mile of the cultivated portion.

Political Divisions.—From the earliest times Egypt has been divided into three principal divisions—viz., 1. Lower Egypt or Bahari, consisting for the most part of the delta of the Nile. 2. Middle Egypt or Vostani, called by the ancients *Heptanomis*. 3. Upper Egypt or Saïd, the ancient *Thebaïd*.

LOWER EGYPT.—CAIRO 250 (Nile), Alexandria 60 (Lake Mareotis), Rosetta 4, Fouah, Sa-el-Hajar, Șelamoun, Tanta, Menouf, n. (Rosetta Mouth), Damietta 28, Mansourah, Mahala-el-Kebir, n., Semenhood, Kelioub (Damietta Mouth), Salahieh 6, n., Belbeys 5, Matarieh (Pelusiac Mouth), San (Tanitic Mouth), Suez 2 (Gulf of Suez).

MIDDLE EGYPT.—Ghizeh, Metrahenny, Atfieh 4, Medinet-el-Fayoum, n., Beni-Souef 5, Minieh, Mellawee (Nile), Siwah-el-Kebir (Libyan Desert).

UPPER EGYPT.—Siout 25, Manfalout, Ek-mim, El-Menshieh, Girgeh, Denderah, Keneh, Koptos, *Ruins of Thebes*, Esneh, El-Kab, Edfou, Assouan (Nile), El-Khargeh 6, El-Kasr (W. Desert), Cosseir 2 (Red Sea).

Descriptive Notes.—LOWER EGYPT—*Cairo* or *Grand Cairo* (the *El-Masr* of the Egyptians, and *El-Kahireh* of the Arabs), the capital of Egypt and the largest city in Africa, near the right bank of the Nile, and 5 miles above the apex of its delta, was founded by the Arab conquerors of Egypt, A.D. 970. Its numerous mosques and minarets give it an imposing appearance from a distance; but the dwellings of the people are mean, and built of sun-dried bricks, and the streets, though clean, are extremely narrow. It contains many public baths, bazaars, and manufactories; and it is traversed by a canal, for irrigation. Outside the walls are the tombs of the Mameluke kings, splendid but decayed monuments of Saracenic architecture. South of the city, on the island Rhoda, is the Nilometer—a graduated column for indicating the extent of the inundations. *Alexandria*, on a narrow isthmus between the sea and Lake Mareotis, derives its name from Alexander the Great, who founded it, B.C. 332. At one time the proud capital of the East and the second city of the Roman Empire, it is still a place of great importance, and, with the exception of the capital, by far the most populous city in Egypt. It is the station of the Egyptian fleet, the emporium of its commerce with Europe, an important station on the overland route to India, and the residence of the foreign consuls. Its exports are valued at upwards of £1,000,000 sterling, and its imports at 1½ millions. Among the principal remains of its ancient splendour are numerous cisterns, catacombs, Pompey's Pillar, and Cleopatra's Needle. Alexandria contained the most extensive and famous library of the ancient world, amounting, at one time, to 700,000 volumes. It was partly destroyed by accident, during the war with Julius Cæsar, and the remainder by command of the Caliph Omar, who took the city by storm, A.D. 640. In ordering the destruction of this invaluable collection of ancient learning, this royal bigot is reported to have said, that "if the books agreed with the Koran, they were useless, and need not be preserved; and if they did not, they were pernicious, and ought to be destroyed!" The Septuagint translation of the Old Testament—unquestionably the most ancient and important of all the versions of Scripture—was executed here, during the joint reign of Ptolemy Lagus and Philadelphus his son, about the year 285 B.C. Here, in 1801, the French were defeated by the British, under Sir Ralph Abercromby, who was mortally wounded in the engagement. Alexandria was the birthplace of Euclid, Apollos, and many other eminent individuals. *Rosetta* has greatly decayed since the opening of the Mahmoudieh Canal, which connects Alexandria with the Nile; near it the ruins of *Bolbitinum*, where, in 1799, was discovered the famous Rosetta stone, which formed the key to the deciphering of the Egyptian hieroglyphics, and which is now deposited in the British Museum. *Sa-el-Hajar*, now in ruins, represents the ancient Saïs (the capital of Lower Egypt) which contained the palace and burial-place of the Pharaohs, as well as the tomb of Osiris. *Damietta*, the third principal port of Egypt, was long famous for its manufactures of leather, and of striped cloths termed in Europe *dimity*. *Belbeys* (Bubastis) has numerous mosques, and is a station on the route from Egypt to Syria: the ancient city was the chief seat of the worship of Bubastis. *Matarieh*, a village on the site of the ancient On or Heliopolis, 5 miles N.E. of Cairo, was a chief seat of the Egyptian worship of the sun, and hence named by the Hebrews *Beth-Shemesh*. *San* (*Zoan* and *Tanis*), a ruined city 15 miles S.S.W. of Lake Menzaleh, was one of the capitals of Lower Egypt under the early kings, and one of the most ancient cities in the world, having been built 7 years after Hebron. *Suez* is a station for numerous caravans and travellers: from its position on the high road between Egypt and the East, Suez has always been a place of extensive transit trade; and since the establishment of the overland route to India, it has become the residence of many merchants and agents.

MIDDLE AND UPPER EGYPT.—*Ghizeh*, the principal town in Middle Egypt, 3 miles above Cairo, and on the left bank of the Nile: here the pyramids commence, the largest of which, 763 feet square at its base, covers 13 acres, and is 460 feet high. Herodotus says it employed 100,000 men for 20 years in building. Its solid contents have been computed at 85,000,000 cubic feet. *Metrahenny*, a village among the ruins of the ancient Memphis, which, after the fall of Thebes, became the capital of Egypt. Of its remains little deserving of notice now exists, except a large colossus of Rameses, which is remarkable for the beautiful expression of the face. *Medinet-el-Fayoum* (Arsinoë) has several Coptic churches, mosques, and manufactures of woollen stuffs: it was anciently the chief seat of the worship of the crocodile. *Beni-Souef*, the entrepôt for the produce of the valley of Fayoum, has cotton-mills and alabaster quarries. *Siwah-el-Kebir*, capital of an oasis in the Libyan desert, and built of fossil salt: near it are the ruins of the famous temple of Jupiter Ammon. The oasis contains several salt lakes, and many date-palms; while the gardens produce the vine, fig, and pomegranate, in rich abundance. *Siout* (Lycopolis), capital of Upper Egypt, and the largest and best-built town S. of Cairo, was till lately the principal seat of the slave trade in Egypt, and is still the entrepôt between Cairo, Darfur, and Sennaar. It is an important military station, and has a manufactory of pipe-bowls, which are largely exported. *Ek-mim* (Panopolis), now in ruins, was anciently one of the most important cities of the Thebaïd. *El-Menshieh* (Ptolemais) has nitre works and a large government cotton-factory. *Girgeh*, next to Siout the most important town in Upper Egypt, contains the oldest Roman Catholic monastery in Egypt. *Denderah* (Tentyra), a village on the left bank of the Nile, celebrated for its temple, the most magnificent and best preserved of the remains of antiquity in Egypt. *Keneh* or *Ghenneh* (Cœnopolis), opposite Denderah, an important mart for agricultural produce and for the trade with Arabia and Central Africa, has been long noted for its manufacture of porous water-jars, used for draining the water of the Nile during its inundations. A little higher up are the stupendous ruins of *Thebes*, among the most remarkable of which are the magnificent temples of Karnac and Luxor. Thebes was long the capital of Egypt, and one of the most famous cities of the ancient world; and though the date of its foundation is lost in antiquity, it was at the height of its splendour about 1600 years B.C. *Esneh* (Latopolis), the principal commercial town of Upper Egypt, famous for its vast ancient temple, which is now converted into a cotton warehouse. *Edfou* (Apollinopolis Magna), a village of mud huts, but surrounded by some of the finest ruins in Egypt. *Assouan* (Syene), near the first or lowest cataract of the Nile, and in the vicinity of the far-famed syenitic quarries of the Thebaïd, was a place of importance in the geography and astronomy of the ancients, as it lay just under the Tropic of Cancer, and was therefore chosen as the place through which they drew their chief parallel of latitude. *El-Khargeh*, capital of the Great Oasis, is a station for caravans going from Egypt to Darfur and Central Africa. *Cosseir*, a seaport-town on the Red Sea, is an entrepôt for the trade between Egypt and Arabia.

Islands.—Phars, Rhoda, El-Sag (*Elephantine*), El-Heif (*Philae*), all in the Nile.

Phars, now an isthmus, was anciently famous for its lofty tower and lighthouse, erected by Ptolemy Philadelphus: here, according to tradition, the seventy translators of the Greek version of the Old Testament were confined till their work was completed. *Rhoda*, opposite Cairo, contains the Pacha's gardens and the ancient Nilometer. *Elephantine*, opposite Assouan, is noted for its rock-hewn temples and immense granite quarries. *Philae*, above the first cataract, is celebrated in ancient mythology as the burial-place of Osiris and Isis; it contains some fine Egyptian remains.

Mountains.—A low range of hills skirts the valley of the Nile on both sides, from Assouan to Cairo. A far loftier chain runs along the coast of the Red Sea, which it separates from the valley of the Nile: highest summits, Jebel Lehuma (lat. 24°), 9000 feet, and Jebel Gharib (lat. 28°), 6000 feet.

River System.—The only river in Egypt is the Nile, to the annual inundations of which the fertility of the country is mainly due. For the sources and tributaries of the river, see under "Africa," p. 531, and for the cities and towns on its basin, under "Abyssinia," 544.

Near Cairo the river spreads out into numerous arms, which enclose the fertile region called the *Delta*, so called from its shape, which is triangular and like the fourth letter of the Greek alphabet. In ancient times there were seven such arms or mouths, but at present there are only two—the Rosetta and the Damietta mouths. It was long supposed that the inundations of the Nile were caused by the melting of the snows in the Abyssinian mountains; the real cause, however, seems rather to be the periodic rains which fall in the north tropical regions of this continent between July and September. The recent travels of Speke along the S. margin of Lake Nyanza, and the discoveries of Livingstone in regard to the inundations of the Zambezé, leave scarcely any doubt on this point. The waters of the Nile begin to rise at Cairo in June, attain their maximum height in September, and, after remaining stationary for a few days, begin to subside gradually till the end of November. In Upper Egypt, where the valley of the Nile is very narrow, the maximum rise of the water is about 30 feet; at Cairo, about 24 feet; but, in the north of the Delta, only about four feet. The amount of the rise is a matter of extreme solicitude to the inhabitants; for, should it exceed its customary limits by even a few feet, the houses are swept away, the cattle drowned, and incalculable injury effected; while, should it come short of its average height, a famine is the inevitable consequence. On the retiring of the waters, the ground is covered with a rich deposit of mud, which is partly composed of vegetable matter, and which imparts an unparalleled fertility to the soil. Much of the subsiding water is retained in artificial canals, which, for the purposes of irrigation, are spread like a network over the delta and the narrow valley above.

Lakes.—See under "Asia," par. 12.

Climate.—The climate of Egypt is extremely dry, and the heat of summer is oppressive, owing to the confined position of the country and the lowness of its surface. At Cairo the mean annual temperature is 72°.2, winter 58°.4, summer 85°.1. There are only two seasons—the hot and the temperate; the former from October to March, and the latter during the rest of the year. Snow never falls, and rain is of rare occurrence. During the spring equinox the country is visited by a pestilential hot wind from the S.S.W., called the *simoom;* and, on the subsiding of the waters of the Nile, fever, ophthalmia, and dysentery prevail over the whole land.

Minerals.—The metals do not occur in Egypt, but natron or carbonate of soda, nitre or saltpetre, salt, marble, limestone, and the red granite called "Syene marble," abound. Emeralds are found in the mountains which line the Red Sea, but the mines are now abandoned; granite and limestone have been extensively used in the construction of the pyramids.

Botany.—The northern half of Egypt belongs to Schouw's third or "Mediterranean Region," the southern to the thirteenth or the "Desert Region." (See under "Arabia," and at p. 87.) The flora is very limited as regards the number of species, owing to the peculiar character of the country.

The date-palm of Upper Egypt extends N. as far as Thebes. Among plants peculiar to the country are the papyrus of the Nile (from the cellular tissue of which a kind of paper was anciently made), the zizyphus, and lotus (plants of the buckthorn family). There are no forests, but sycamores and palms are thinly distributed. The fruit-trees are of tropical orders; those of Europe do not flourish. The vine, which was extensively cultivated in ancient times, but extirpated by the Mussulmans, was re-introduced by Mehemet Ali, who also introduced the mulberry tree. The principal cultivated plants are cotton, lint, hemp, indigo, sugar, tobacco, and opium; the cereals comprise wheat, millet, maize, rice, and durrah—the last-mentioned forming, with beans, the main food of the people. Onions, melons, and cucumbers are also extensively raised.

Zoology.—The principal wild animals are the crocodile, ichneumon, jerboa, and fox; the wolf, hyena, and jackal occasionally visit the valley of the Nile, but the hippopotamus has long ago retired to Upper Nubia, and never visits the waters of Egypt except when forcibly borne down by the flood. Reptiles are numerous, especially crocodiles and frogs, while insects embrace the locust and mosquito, the principal scourges of the country. Domestic animals are the same as in Europe, with the addition of the camel and dromedary. Poultry are reared in vast numbers, the eggs being hatched by the heat of ovens, and not by the ordinary process of incubation. It is said that 24,000,000 of eggs are annually subjected to this vivifying process; but the poultry thus reared are destitute of the instincts which relate to the care of offspring, and hence the artificial method must be persisted in.

Ethnography.—From the tenth chapter of Genesis we learn that Egypt was first colonised by Mizr, the second son of Ham, who gave his own name, Mizraim, to his adopted country.

The term Mizraim, however, probably refers only to Lower Egypt, for, from recent researches, it would appear that Middle and Upper Egypt derived their first inhabitants from Ethiopia (Nubia and Abyssinia), which was itself peopled from Southern Arabia. The Ethiopians soon became masters of the whole country, having reduced the aboriginal inhabitants of the Delta into a state of complete subjection. They introduced their own religion (animal-worship), the arts of agriculture, the knowledge of letters, and a system of caste, not essentially different from that of Hindostan. The priestly caste was the most honoured and influential, possessed the finest portions of the country, were the judges, physicians, astrologers, and architects, and the sole custodiers of the traditions, literature, and sacred writings. Their fame and influence extended beyond the limits of Egypt, and induced many of the noblest spirits of ancient Greece to visit the country—as Solon, Pythagoras, Archytas, Thales, Herodotus, and Plato. The other six castes are now probably represented by the fellahs or cultivators of the soil, who form the great majority of the inhabitants.

Language and Religion.—The ancient Egyptian was closely allied in grammatical structure to the Hebrew and Arabic, but glossarially it seems to have formed a connecting-link between the Shemitic, Indo-European, and African families. It has been extinct for ages, and no literary remains exist to show its true character, except some ancient inscriptions, which, till recently, remained utterly unintelligible to scholars. The Rosetta stone, containing a trilingual inscription, one of which is in Greek, has proved of great service in revealing the contents of the inscriptions; and additional information may yet be obtained from a careful inspection of the dialects into which it was ultimately divided, and in which very ancient translations of the Scriptures have been handed down. These dialects are the *Coptic*, now a dead language, but at one time the vernacular tongue of all Egypt; the *Sahidic*, anciently spoken in Saïd or Upper Egypt; and the *Bashmuric*, at one time prevalent in a portion of the Delta. The Arabic is the only language presently spoken in Egypt, while the Mohammedan is the religion professed by the great body of the people, and, next to this, a corrupt form of Christianity termed the Coptic.

Government, &c.—The government is an hereditary viceroyalty, under the successors of Mehemet Ali, but owning a nominal subjection to Turkey.

"For twenty-four centuries, Egypt," says Mr Keith Johnston, "has been subjected to foreign domination. It was taken by Alexander the Great, B.C. 332. After his death it formed a separate kingdom under the Ptolemies, till B.C. 30; Augustus then reduced it to a Roman province; the Mohammedan Arabians seized it in the seventh century, and the caliphs possessed it for two centuries more; in 1250 it came under the power of the Mamelukes, who were subjected to the Turks at the commencement of the sixteenth century; the French overran it in 1798; in 1802 they were driven from it by the British; and in 1811 Mehemet Ali rendered himself master of the country by the massacre of the Mamelukes. By judicious government and great reforms, the country made rapid progress in civilisation under his rule. He added to his territory Nubia, Kordofan, and part of Abyssinia, Syria, Crete, and part of Arabia; but in 1840 he was deprived of all his Asiatic possessions." The army is raised by conscription, and in 1858 consisted of, infantry, 12,000; cavalry, 4500; artillery, 1500; engineers, 3000; and a regiment of negroes in Soudan. The fleet consisted of 7 line-of-battle ships, 6 frigates, 4 corvettes, 7 brigs, 2 steam-packets, and 23 transports. In 1855, the Public Revenue amounted to £3,825,000; the Expenditure to £3,800,000; and the Public Debt to £1,450,000 sterling.

Manufactures.—There being no coal nor iron found in the country, the manufactures are inconsiderable, consisting chiefly of woollen cloths, pottery-ware, carpets, firearms, and military accoutrements; and even these are monopolised by the government.

Commerce.—Egypt has recently become, what it was in ancient times, the high-road of commerce between the East and West. The trade with Europe is carried on through Alexandria, thence to Cairo and Suez by a railway, which was completed in December 1858; total length 292 miles, now traversed in about eight hours—thus greatly shortening and facilitating the overland route to India.

From Suez there is a regular steam communication along the Red Sea to Aden, and thence to Bombay, Madras, and Calcutta. The intercourse with Central Africa is very considerable, and is carried on by means of caravans, which bring, in exchange for European and Egyptian products, ivory, gold-dust, skins, wool, gum, ostrich feathers, metals, and, till recently, slaves; but the slave-market was abolished in 1846. The Exports are estimated at £1,813,825, and the Imports at £2,470,866.

NUBIA AND KORDOFAN.

Boundaries.—N., Egypt, the Sahara, and Darfur; S., Abyssinia; E., the Red Sea. Lat. 11°—24° N., lon. 28°—39° E. Khartum, the modern capital, is nearly in the same latitude as the island Dominica in the West Indies, Cape Verde, Lake Tchad, Goa, Amherst, and Lanchang.

Area and Population.—Including Kordofan, the area is vaguely estimated at 300,000 square miles, and the population at 400,000, though some give it as high as 3,000,000.

Political Divisions.—The old political divisions of the country, though disregarded by its present Egyptian masters, are as yet the only ones recognised in Europe—viz.,

LOWER NUBIA.—Derr or Deir 3, Kalabsheb, Dakkeh, Ipsambul (Nile), Selimah (Western Desert).

DONGOLA.—Marakah or New Dongola 6, Berber 9, Damer or Ed-Dhamer 3 (Nile).

MEROE.—Shendi 10, Assur or Meroë, Gurkab, Halfay (Nile).

SENNAAR.—Khartum 15, Al-Leis (White Nile), Sennaar 5 (Blue Nile), Suakin 8 (Red Sea).

KORDOFAN.—El-Obeïd 30, in an oasis of the Desert.

Descriptive Notes.—*Derr* or *Deir*, capital of Lower Nubia, is an assemblage of mud-built huts, surrounded by palm groves, which produce dates of a superior quality. *Ipsambul* or *Abusimbel*, with two temples containing statues and sculptures erected by Rameses the Great. *Selimah*, in an oasis of same name, exports large quantities of salt. *Marakeh* or *New Dongola* has an indigo factory belonging to the pacha of Egypt; it is a military depôt and a place of considerable trade, especially in slaves. *Berber*, the rendezvous of the slave-merchants from Sennaar and Khartum. *Shendi*, a caravan-station, has a semi-weekly market for live stock, wheat, cotton cloth, salt, and senna, which is largely raised in the vicinity. *Assur*, a village situated among the ruins of ancient Meroë, consisting of temples, pyramids, and other public works, in a style closely resembling the Egyptian. Meroë was, at an early period, the chief emporium of trade between Egypt, Ethiopia, Arabia, and India. It was the capital of a powerful state, and contained a celebrated oracle of Jupiter Ammon. *Khartum*, capital of Sennaar and of all Nubia, is the residence of the Egyptian governor, and formerly the great depôt of slaves sent from Soudan and Abyssinia into Egypt. *Sennaar*, the former capital of the province of same name, was reduced by Mehemet Ali; houses mostly of straw; manufactures of arms, hats, leather, sandals, iron-ware, and jewellery. *Suakin*, on an island off the west coast of the Red Sea, is the station for pilgrims proceeding to Mecca. *El-Obeid* consists of several villages clustered together in an oasis, whose united population amounts to 30,000; it exports gold, silver, ivory, hides, gum-arabic, and slaves.

River System.—See under "Abyssinia," p. 544.

Climate, extremely hot and dry, but generally healthy. N. of lat. 20° rain seldom falls, and even in Sennaar the rainy season does not bring rain more than once every two or three years. Immediately before the periodic rains of the southern provinces the heat is insupportable—the thermometer rising in the shade to 119° Fah., while the humid air resembles a steam-bath. Then come the fatal fevers and dysentery; but the plague is unknown south of the second cataract.

Botany.—The whole country between Egypt and the 15th parallel is embraced within Schouw's 13th Phyto-geographic Region. Sennaar and Kordofan belong to the 14th region, or the "Region of Tropical Africa." (See under "Arabia" and "Africa," par. 16).

The baobab, the largest and one of the most useful of all trees, palms of many species, the ebony-tree, the acacia, and mimosa abound, while the cultivated plants are durrah, barley, cotton, indigo, tobacco, senna, coffee, dates, and the sugar-cane. Agriculture employs most of the population along the banks of the rivers The valley of the Nile is so narrow as to allow very little space for cultivation, but immense fertile plains occur at the confluence of that river with its affluents: here artificial irrigation is practised as in Egypt.

Zoology.—Apes, baboons, elephants, rhinoceroses, hyenas, gazelles, giraffes, wolves, foxes, and wild-dogs, are the principal mammalia. Birds comprise the vulture, ostrich, bustard, shrike, thrush, parrot, heron, quail, and Guinea-fowl. The crocodile is the principal reptile.

Ethnography.—The Nubians Proper are Ethiopians, and are supposed by some to resemble the ancient Egyptians more closely than do even the Copts. They are a fine, hard-working, and industrious people, and their morals are greatly superior to those of the Turks and Arabs.

In the southern provinces of Sennaar and Kordofan, the inhabitants are chiefly negroes. They are the remnants of a once powerful negro nation who came down the White Nile and subdued the Nubians in 1504. The pastoral tribes of the eastern desert and those dwelling along the shores of the Red Sea, are of Arab origin. The latter speak the Gheez language, a dialect of the Arabic; derive their subsistence from fishing; and appear to be the same people as the ancient *Troglodytes* or dwellers in caves. The Arabic is the common language, and the Mohammedan the sole religion of Nubia. Kordofan is peopled by three races, —the Nubas or negroes, the original inhabitants; the Dongolani, who at different times invaded the country; and tribes of Bedouin Arabs, from Arabia. Several of the tribes are Mohammedans, but others are still pagans. (See under "Africa," art. 18.)

Government.—Previous to the conquest of Nubia by Ibrahim Pacha, in 1821, the country was governed by a great number of independent chiefs; since then it has been under the dominion of Egypt. The Egyptian viceroy resides at Khartum.

ABYSSINIA, OR HABESH.

Boundaries.—E. and N.E., the Red Sea; N. and N.W., Nubia; S., the country of the Gallas; W., unknown countries in the interior. Lat. 8°—16° N.; lon. 34°—43° E. Gondar, the capital of Amhara, near the centre of Abyssinia, is on the same parallel with the extreme N. of South America, Bathurst in Senegambia, the S. shore of Lake Tchad, Aden, Madras, and Cambodia.

Area.—The area is estimated at 245,000 square miles, and the population at 4,500,000, or twice the area of the British Isles, with a population little more than one-fourth of England and Wales.

Political Divisions.—For a long time Abyssinia was under a single monarch, but it now consists of an assemblage of independent states and petty chieftainships, of which the following are the principal:—

TIGRÉ.—Antalo 5, n., Sireh, Tackeraggiro, Sokota (Atbara or Tacazze), Axum 4, n., Adowa 8, Dixam (Marab, *affl.* Atbara).
AMHARA.—Gondar 7, n., Emfras, Kiratza (Lake Dembea).
SHOA.—Ankobar 12, n., Tegulet, Angollalla 3, n. (Djimma *affl.* Bahr-el-Azrek).
SAMARA.—Masuah or Massouah 12, Arkiko (Red Sea).

Descriptive Notes.—*Antalo*, capital of the state of Tigré, is a mean wretched place, consisting of about 1000 huts, but containing the palace of the king, and possessing some trade, and a manufactory of spears. *Axum*, the ancient capital of the kingdom of Abyssinia, now greatly decayed, but surrounded by numerous obelisks destitute of the usual hieroglyphic inscriptions and generally lying prostrate. Only two are standing, the largest of which is a granite block 60 feet high, considered the most perfect monument of its kind: here is also a Christian church in which are kept the famous "Chronicles of Axum," a copy of which was brought to Europe by Bruce, the Abyssinian traveller. *Adowa*, the largest town in Tigré, the chief entrepôt of trade on the great caravan-route between Masuah and Gondar, and a place of manufacturing importance. *Gondar*, capital of Amhara, the central state of Abyssinia, was formerly very extensive, but has now greatly declined. It is built on the side of an extinct volcano; the inhabitants are described as licentious in the extreme, and addicted to brutal and unnatural vices. *Ankobar*, capital of Shoa, a state lying in the S.W. of the country. Owing to its position on a hill, at an elevation of 8200 feet, it is considered the healthiest and most agreeable place in Abyssinia. *Masuah* or *Massouah*, the largest town in Samara, and the principal seaport town in the whole country. It belongs to Egypt, and is the residence of an Egyptian governor. Its imports and exports are numerous, and it carries on an active trade with Bombay and the Arabian ports.

Surface and Mountain-Ranges.—Considered as a whole, Abyssinia forms a lofty table-land, gently inclined to the N.W., with two great declivities on the E. and S. sides towards the Red Sea and the interior of South Africa. The plateau of Amhara is 8000 feet above the level of the sea. This table-land is traversed in various directions by mountain-ranges, the higher elevations of which frequently rise above the limits of perpetual snow. The following are the two principal chains:—

The *Samen Range*, running N.E. and S.W. between the Atbara and Bahr-el-Azrek, containing Ras Detschen, at the source of the Tacazze, 15,986 feet; Abba Jarret, between the Tacazze and the Guenqua, 14,707 feet; Buahat, 15,000 feet; Ambattai, 12,000 feet; Beyeda, 12,000 feet.

Taranta Range, along the N.E. coast, and separating the basin of the Tacazze from the Red Sea; highest summits about 7000 feet. Height of line of perpetual snow in Abyssinia, about 14,000 feet.

The **River System** of Egypt, Nubia, and Abyssinia, or the basin of the Nile. The total length of the river, including windings, is about 3000 miles; and the area of its basin is estimated at 520,000 geographical square miles.

Rivers.	*Towns.*
Nile and White Nile,	Damietta, *Mansourah*, *Mahala-el-Kebir*, n., *Semenhood*, *Kelioub* (*on the Damietta Mouth*), *Rosetta*, **Alexandria**, n., *Fouah*, *Sa-el-Hajar*, *Selamoun*, *Tanta*, *Menouf*, n. (*on the Rosetta Mouth*), *Salahieh*, n., *Belbeys*, *Matarieh* (*Pelusiac Mouth*), *San* (*on the Tanitic Mouth*), CAIRO, *Ghizeh*, *Metrahenny* (*Memphis*), *Atfieh*, *Medinct-el-Fayoum* (*Arsinoë*), n., Beni-Souef, *Minich*, *Mellawee*, *Manfalout*, *Siout* (*Lycopolis*), *Ek-mim*(*Panopolis*), *El-Menshieh* (*Ptolemais*), *Girgeh*, *Denderah* (*Tentyra*), *Keneh or Genneh* (*Cœnopolis*), *Ruins of Thebes*, Esneh, El-Kab, *Ed-fou* (*Apollinopolis*), *Assouan* (*Syene*), *Kalabsheh*
Nile and White Nile—*continued.*	(*Talmis*), Dakkeh, Derr, Ipsambul, *New Dongola*, Berber, *Ed-Dhamer*, Shendi, *Assur* (*Meroë*), *Gurkab*, *Halfay*, KHARTUM.
Atbara or Tacazze,	Berber, n., *Sireh*, n., Tackeraggiro, n., ANTALO, n., Sokota, n.
Mareb,	*Dixam*, n., *Adowa*, *Axum*, n.
Geba,	ANTALO.
Bahr-el-Azrek or Blue River and Lake Debea,	KHARTUM, Sennaar, *Emfras*, *Kiratza*, GONDAR, n., on the Angrab.
Djimma, *l*	*Tegulet*, Angollalla, n. ANKOBAR or Angobar.
Bahr-el-Abiad, the main branch, *l*	KHARTUM, *Al-Leis*, *Djar* (lat. 5°), Gherba (a great cataract in lat. 3° N.), Robego, capital of Kuenda, 100 miles above the cataract. (See *Proceedings of Royal Geographical Society*, May 9, 1859.)

Lakes.—See under "Africa," art. 12.

Climate.—Extremely various—intensely hot in the valleys and on the coast of the Red Sea; cool and bracing on the table-lands; severe cold on the summits of the snow-clad mountains. The periodic rains commence in June and continue till September, during which they are so violent as to put a stop to all out-door operations. Major Harris found the mean temperature of Ankobar, in June 1842, to be 62°.1, and of January, 52°.

Minerals.—"In a Geological point of view, Abyssinia presents the most remarkable and complex features in the world, comprising extinct volcanoes, hot springs, repositaries of sulphur, rock-salt, combustible substances, and malachite. Other minerals are granite, slate, gneiss, antimony, iron, gold, and silver. South-east of Tigré is an extensive plain, which, to the depth of two feet, is pure salt, so hard as to require to be cut with a hatchet." The iron and salt alone are turned to profitable account.

Botany.—The vegetation of this country belongs in part to Schouw's twelfth and fourteenth Phyto-geographic Regions. (See p. 56.)

The forests are magnificent, and contain sycamores of great size, cedars, and beautiful specimens of the acacia. The high plateaux yield luxuriant pasturage. The coffee-plant is indigenous, and, with cotton, grows wild in the mountains. The soil of the lower grounds is extremely fertile, and furnishes, without cultivation, many of the finest vegetable productions of the torrid zone. In some places as many as three crops are produced yearly. The principal cultivated plants are *teff* (Poa Abyssinica), from which is made the usual bread of the people : the wheat and barley are excellent, and are found here in numerous varieties : the sugar-cane is cultivated, but is only chewed, as the art of extracting the sugar is unknown. The vine is reared in some parts, the finest grapes being met with to the east of Lake Dembea ; myrrh, senna, and other medicinal plants are plentiful.

Zoology.—The wild animals are numerous, and comprise the lion, panther, leopard, wolf, striped hyena, two-horned rhinoceros, elephant, hippopotamus, booted lynx, camelopard, zebra, quagga, boar, buffalo, antelope, gazelle, and monkey. Birds of all kinds abound, including the eagle, vulture, parrot, partridge, quail, and numerous species of waterfowl. Crocodiles and serpents are numerous, and some of them of great size. Bees are much cared for, and some of the provinces pay a large proportion of their tribute in honey. The ravages of the locust are terrible, and an insect called the *saltsalya*, a little larger than a bee, is extremely noxious. Mules, camels, and asses are the usual beasts of burden, the horses being generally reserved for war and the chase.

Ethnography.—The modern Abyssinians are a very motley group of different races, consisting of descendants from the primitive Ethiopic stock ; of many Jews settled for ages in the country, and forming distinct colonies under the name Felasha ("the Exiles") ; of a large population of Arabic origin ; of Gallas, who have been introduced from the south, extremely barbarous ; and of true negroes in a state of slavery.

Languages.—The Ethiopic or Gheez was anciently the only vernacular dialect of Abyssinia, but the Amharic and Tigré, its two modern dialects, are now the only languages spoken in the country, except the Arabic, which is spoken on the sea-coast, and the Galla, which is not of Shemitic origin, on the southern frontier.

Religion.—The religion of Abyssinia is for the most part a very corrupt form of Christianity. The Christian religion was established here in the fourth century, but it has long been shorn of its characteristic features. Baptism and the Lord's Supper are dispensed after the manner of the Greek Church. Mohammedanism prevails among the Arab population of Samara, and Judaism among the Jews, who are very numerous in the country. "Abyssinia is perhaps the only country in which Christianity and Mohammedanism are in contact where the professors of Islam are the more energetic and trustworthy, holding the offices which require fidelity, filling the mercantile stations, and descending to the departments of manual labour, while those who take the name of Christians are drones and beggars."

Manufactures.—The manufactures comprise leather, parchment, cotton cloths, tapestry fabricated from wool and goats' hair, and articles of iron and brass. The principal *Exports* are ivory, gold, slaves, cattle, cotton cloth, mules, and honey; and the *Imports*, lead, tin, copper, silk, gunpowder, glass, Indian goods, Persian carpets, French cloths, and coloured skins from Egypt.

BARBARY STATES.

Boundaries.—N., the Mediterranean; W., the Atlantic; S., the Sahara; E., Egypt. Length from E. to W., 2600 miles; breadth varies from 140 to 550 miles. They extend from lat. 23½° N. (Fezzan), to lat. 37° N. (Tunis), and from lon. 25° E. (Egypt), to 12½° W. (Marocco). Marocco, on the central parallel, is in the same lat. as Savannah, Jerusalem, Ispahan, Lahore, and Nankin.

Area, estimated at 652,000 square miles, and the POPULATION at 15,561,003. Hence, with nearly seven times the area of the British Isles, the population is greatly less than that of England.

Political Divisions.—The Barbary States are four in number—1. Tripoli, in the E., including the province Barca and the large oasis of Fezzan in the Desert, termed a *beyalic*, and subject to the Ottoman Porte. 2. Tunis, N.W. of Tripoli, also a beyalic of the Turkish empire. 3. Algeria, W. of Tunis, a colonial possession of France since 1830, and divided into three provinces, Constantine, Algiers, and Oran, but by the natives into the Tel or "country of grain crops," and the Beled-ul-Jered or "land of dates;" and, 4. The empire of Marocco, W. of Algeria, consisting of the kingdoms Marocco and Fez, lying between the Atlantic and Mount Atlas, and the districts Sus, Draha, Tafilet, and Sejelmessa, lying to the S. and E. of that range.

1. **Tripoli.**—Area, 200,000 square miles; population, 2,000,000.

BARCA.—Benghazi 5, Derna 6, Grennah (N. coast).

TRIPOLI.—Tripoli 16, Mesurata (N. coast).

FEZZAN.—Mourzouk 4, Gatrone, Suckna (an oasis).

2. **Tunis.**—Area, 72,000 square miles; population, 2,500,000.

TUNIS 180, Cabes 30, Sfax or Sfakus 6, Monastir 12, El-Jemm, Susa 10, Kairwan 50, n., Hammamet 8, Bizarta 8 (coast).

3. **Algeria.**—Area, 90,000 square miles; population, 2,561,003.

CONSTANTINE.—Constantine 23 (Roumel), Bona 12, Phillipville 9 (N. coast).

ALGIERS.—Algiers 52, Belida 9, n. (coast), Medeya 6, n. (Wady Shelif).

ORAN.—Oran 30, Marabet, Mostaganem 9 (coast), Tremezen 14, n. (Tofna).

4. **Marocco.**—Area, 290,000 square miles; population, 8,500,000.

FEZ.—Fez or Fas 80, Mekinez 70, n., Soforo, n. (Seboo), Tetuan 16, Ceuta 8, Peñon de Velez, Tangier 10 (N. coast), El Araish 4, Al Ksar (Al Kos), Salee or Sla 14, Rabatt 40, Mazagan (Atlantic coast).

MAROCCO PROPER.—Marocco 80 (Tensift), Saffi 12, Mogador 17, Agadir or Santa Cruz (W. coast).

Sus.—Tarodant 21, Tedsi 15 (Sus), Messa 3, Talent (Al Messa).
Draha.—Tatta 10 (Draha or Draw).
Sejelmessa.—Sejelmessa (Ziz or Sejelmessa).
Tafilet.—Tafilet 10 (Zaimbi).

Descriptive Notes.—*Benghazi*, a mean little town, situated among the ruins of the ancient Berenice, the fabled site of the gardens of the Hesperides. *Derna* (Dernis), a seaport town, once the seat of the government of Tripoli. *Grennah*, on the ruins of Cyrene, the ancient capital of Cyrenaica, had a fountain dedicated to Apollo, and was the birthplace of Aristippus, Callimachus, and the Christian bishop Synesius. *Tripoli*, properly Tripolis, capital of the beyalic of same name, derives its name from the three ancient Carthagenian cities—Sabrata, Oea, and Leptis Magna. Though of humble dimensions, it carries on an extensive commerce with Central Africa by means of caravans. *Mourzouk* is a small town, built of brick, in an oasis of the Sahara, noted for its rank vegetation and unhealthy climate. It is the last stage for obtaining water and provisions on the caravan-route from Tripoli to Bornou, and is the residence of a British consul. *Tunis* (Tunes), capital of the beyalic of same name, is the most populous city in Barbary, and, with the exception of Alexandria, the most commercial in Africa. The Bey resides in the vicinity, in a palace built in the Saracenic style. It is a place of great trade, and has extensive manufactures of linen and woollen cloths, red woollen caps, marocco leather, and various celebrated essences. About ten miles to the N.E. are the ruins of ancient Carthage, once the proud rival of Rome. *Cabes* or *Khabs* (Tacapa), a seaport town which gives its name to a gulf on the E. coast of Tunis, has some export trade in dates and henna. *Monastir* or *Mistir*, a place of considerable trade, with manufactures of woollen and camlet fabrics. *El Jemm* (Tsydras), a ruined town containing the remains of a magnificent Roman amphitheatre, second only to those of Rome and Verona. *Kairwan*, a large city in a sandy plain at a considerable distance from the coast, was the first seat of Saracenic empire in Barbary; it contains the finest mosque in Africa, and is one of the holy cities of the Mohammedans. *Bizerta* or *Benzerta* (Hippozarytus), a fortified seaport town, and the most northern in Africa. *Constantine* (Cirta), a fortified city, was taken by the French in 1847, and is now a flourishing place, with manufactures of saddlery and other leathern goods. *Bona*, a fortified seaport town, which has greatly improved since it came into the possession of the French. It maintains regular steam communication with Marseilles, Cette, Algiers, and Tunis: near it are the ruins of Hippo Regis, once the see of St Augustine. *Algiers* (*Arab.*, Al Jezair, *Fr.*, Alger), capital of the French dominions in Africa, was seized by the French in 1830. since which it has been strongly fortified; it has now the appearance of a European city, is the residence of the Governor-General of Algeria and of many foreign consuls, and has regular steam communication with Toulon, Cette, Oran, and Bona. *Oran* or *Wahran*, capital of the most western province of Algeria, was built by the Spaniards, and is surrounded by strong walls and ditches. *Tlemsen* or *Tremesen*, has manufactures of woollen and cotton stuffs, and numerous ancient remains in its vicinity. *Fez* or *Fas*, once the capital of a powerful independent kingdom, and the finest city in Western Barbary: though now reduced to the rank of a provincial capital, it remains the holy city of the empire, and one of the three residences of the Sultan. It contains, besides the university of Marocco, 360 mosques, and numerous schools. It is the principal seat of the manufacture of marocco leather, which is prepared here in great perfection. Other manufactures are carpets, woollens, silks, jewellery, saddlery, and earthenwares. *Mequines* or *Mekinez*, one of the handsomest towns of Marocco, contains an imperial palace of great beauty and extent. *Ceuta*, built on a hill which was known to the ancients as one of the Pillars of Hercules (the rock of Gibraltar, just opposite, and 17 miles distant, being the other), has belonged to Spain since 1640; it is the chief of the Spanish *presidios* on the African coast, and the seat of a military governor. In the late war between Spain and Marocco numerous sanguinary engagements took place near Ceuta. *Peñon de Velez*, 80 miles S.E. of Ceuta, also belongs to Spain; it is a fortified town built on an elevated rock, and has a bomb-proof magazine, ample storehouses, and a state prison. *Tangier*, a strongly-fortified town on the N. coast of Fez, is the residence of a pasha and of European consuls. In 1662 it was ceded by the Portuguese to the British, who retained possession of it for 22 years. *Salee* or *Sla*, formerly noted for its piracy, is now sinking into decay. *Rabatt* was formerly the centre of the European trade with Marocco; it exports wool and corn, and has manufactures of carpets. *Marocco*, capital of the empire, situated in the centre of an immense plain which extends to the foot of the Atlas range, is ill built, filthy, and spacious; the walls of the city are six miles in circumference, but many large fields and open spaces strewed with ruins are enclosed within this area. The city was founded in 1073; it contains two colleges and numerous mosques, the principal of which rises to a height of 220 feet. *Mogador*, a fortified city and the principal seaport of Marocco, maintains regular communication with Southern Europe. *Tatta*, a great depôt for the transit trade between Marocco and Central Africa. *Segelmessa*, celebrated for its fine dates. *Tafilet* or *Tafilelt*, capital of a district in the S.E., which is used as a place of banishment for political offenders.

Capes.—(See under "Africa," art. 7.)

Islands.—Jerbah and Karkenah, E. of Tunis; Peñon-de-Velez, N.E. of Fez.

Jerbah, called by the ancients *Lotophagitis*, was celebrated as the abode of the Lotophagi, or eaters of the lotus, a delightful fruit, said to have been so intoxicating that whoever partook of it forgot his own country, and wished to spend his life in the happy region where it was produced. It is still found on the whole of this coast, is in great repute, and sold in all the markets under the name of *jujeb*. It resembles the date in taste, is of a saffron colour, not larger than a bean, and grows in bunches like the myrtle-berry.

Gulfs and Straits.—(See under "Africa," par. 9.)

Mountain System.—The Atlas range extends through the entire length of Barbary, from Barca on the E. to Cape Nun in Marocco, and separates the great basin of the Mediterranean from the Sahara. It increases in elevation from E. to W., being in the S. of Tripoli only 2000 feet high; in Tunis, 4476 feet; in Algeria, 7673 feet; while in Marocco, Mount Miltsin attains an elevation of 11,400 feet, and Jebel Tedla to upwards of 13,000 feet, or above the line of perpetual snow.

Several secondary chains detach themselves from the main range and pursue different directions; one proceeds northward, and terminates at the Straits of Gibraltar; and others, leaving the main range in the S. of Tripoli, extend into the Sahara and Desert of Libya.

Rivers.—Owing to the proximity of the Atlas range, on the one hand to the Mediterranean, and on the other to the Great Desert, the rivers of Barbary are all comparatively small. The greater number of them are little more than winter torrents, the channels of which are dry during summer; while those which flow southward soon lose themselves in the sands of the Sahara, or terminate in salt lakes. The only rivers deserving notice are the following:—

The Medjerda (Bagradas) in Tunis, flows N.E. 200 miles, and empties itself into the Gulf of Tunis. The Sebus, Roumel, Masond, Isser, Shelif, Habrah, and Tofna, all flow N. through Algeria into the Mediterranean. The Mahala or Mulwiah, the principal river of Barbary, flows N.E. through Marocco into the Gulf of Melilah. The Al Kos, Seboo, Bu-Regreb, Omer Begh, Tensift, Sus, and Noun, flow W. through Marocco into the Atlantic. The Jidi, in Algeria, flows S.E. into Lake Melgig; the Jinen, eastward into Lake Al Shot; while the Ghir, Zis, and Draha, in Marocco, flow S. and lose themselves in the sand.

Lakes.—*Al-Sibkah*, a great salt marsh in the S.W. of Tunis; *Lagoon of Tunis* and *Lake Benzart*, in the N. of Tunis; *Shott-el-Melrir*, *Zagos*, and *Sherqui*, salt lakes in the S. of Algeria; *Sebkah*, in the N.W. of Algeria.

Climate.—The climate of North Barbary is temperate, the country being protected from the hot winds of the desert by the high ridges of Mount Atlas, and at the same time exposed to the cool sea-breezes. S. of the Atlas range the climate is tropical and the heat intense. Rain is frequent in winter, less copious during spring, and rarely seen in sum-

Minerals.—Iron, copper, and lead are abundant in Algeria, especially in the province Oran, where cinnabar or sulphuret of mercury is obtained in small quantities, besides extensive mines of nitre, salt, talc, and potters' clay. In Marocco the precious metals are confined to the province Sus, the principal silver mine being situated 150 miles S.W. of the capital. The khol, or antimony ore, used by Moorish ladies in painting the eyebrows, is obtained from Tedlar; while amethysts of great size and beauty are found in the recesses of the mountains. The Atlas Range contains copper, iron, lead, antimony, and rock-salt; but few mines are wrought to advantage.

Botany.—The whole of Barbary is included within Schouw's third Phyto-geographic or Mediterranean Region. (See under "Europe," art. 18.)

The northern slopes of Mount Atlas are clothed with dense forests of pine, oak, cork, white poplar, and wild olives. On the southern slope the lower ranges are covered with palm-trees, especially the date-palm, of which this is the true native region, whence it is denominated by the natives *Beled-el-Jered*, or "land of dates;" higher up grow gum-trees, almonds, olives, &c.; while on the table-lands are found pears, apples, cherries, and other European fruits. The lotus and cassob are indigeneous in Tripoli. The principal cultivated plants are wheat, maize, barley, millet, sorghum, tobacco, cotton, indigo, sugar-cane, henna, and saffron; with olives, dates, grapes, and the fruits of Southern Europe. The soil in the valleys has been always celebrated for its fertility, and in some places yields three crops of corn in the year; but so little is agriculture understood that large crops of corn are sometimes allowed to remain unreaped, while at other times many of the inhabitants die of famine.

Zoology.—The animal kingdom comprises most of the species found in the rest of Africa, except the hippopotamus, rhinoceros, giraffe, zebra, and several species of monkeys. (See under "Africa," art. 17.)

The principal mammals are the Barbary ape, little baboon, panther, lynx, jackal, genet, Barbary squirrel, Barbary mouse, Barbary antelope, Marocco antelope, bearded sheep, the bubalis (a species of buffalo), wild-boar, and the Egyptian jerboa. The Atlas Mountains are infested by large fierce lions, and abound in antelopes, monkeys, and porcupines. In general the *Mammalia* differ widely from those of Europe; while, in regard to *Birds*, besides several found in Southern Europe, Barbary possesses numerous species not occurring in any part of the northern continent. The *Reptiles* comprise the chameleon and leathery turtle. Among *Domestic Animals* may be mentioned the horse, camel, dromedary, ass, mule, buffalo, ox, merino sheep, and goats. The Barbary horses are superb animals, vieing with the Arabian in beauty of form, though not, perhaps, in fleetness. The dromedary is the most general beast of burden.

Ethnography.—The inhabitants belong almost entirely to the Syro-Arabian stock, but consist of three distinct nations—the Berbers, Moors, and Arabs. (See under "Africa," art. 18.)

The Berber *Language* forms a connecting-link between the Shemitic and African familes. Some of the tribes employ the ancient Libyan alphabet of their forefathers, but the Arabic letters are more generally used both in writing and printing. The Moors and Arabs speak a dialect of Arabic called the Mongrebin, or Moorish Arabic. Islamism is the sole religion of the Berbers, Moors, Turks, and Arabs. The negroes, who are very numerous, and mostly slaves, are generally pagans, Soudan being their native country.

SAHARA, OR THE GREAT DESERT.

Boundaries.—N., Barbary States; W., the Atlantic Ocean; S., Senegambia, Soudan or Nigritia, and Kordofan; E., Nubia and Egypt.

The Sahara extends from lat. 16° to 33° N., and from lon. 17° W. to 30 E. Its length from Cape Blanco on the W. to the Nile on the E., is about 2500 miles; its breadth varies from 1000 to 1200 miles; while the area is probably about 2,500,000 square miles, or twenty times the area of the British Isles. Its central point (lat. 24½°, lon. ½° E.) is occupied by a table-land 4000 feet in elevation, and lies on the same parallel as Cape Sable, the S. extremity of Florida, Assouan, the S. limit of Upper Egypt, Kurrachee, Moorshedabad, and Amoy.

Surface.—The Sahara is the most extensive desert on the earth's surface. For hundreds of miles the eye only meets with bare sands in flats and hillocks, or with naked, rocky tracts, destitute of vegetation, and seldom exhibiting any of the forms of animal life.

Till the recent discoveries of Barth and other travellers, very erroneous notions prevailed respecting the configuration of this region. It was represented as a monotonous, low-lying plain, covered almost throughout with loose sand. It is now ascertained to be an immense table-land, with an average elevation of from 1000 to 1500 feet, and surmounted in many parts, especially in the central and eastern portions, by minor plateaux, which not unfrequently attain to a height of from 4000 to 5000 feet. The only extensive low ground in any way connected with the desert is that which separates it from Marocco, Algiers, and Tunis, and which extends from the Gulf of Cabes to the confluence of the Draha with the Atlantic—a distance of about 1400 miles. This immense valley, covered with salt lakes and rivers flowing towards them, attains no greater elevation than from 500 to 1000 feet; Lake Tchad, also, in the centre of the continent, and at the opposite frontier of the desert, is only 830 feet above the level of the sea. The Sahara reaches its culminating point in the S.W. of Mourzouk, about midway between these two depressions. The minor plateaux which surmount the great table-land, and which must have stood out as islands when the vast region around them formed the bed of the ocean, run in the same direction as Mount Atlas in Barbary and the Kong Mountains in Nigritia. This, it will be observed, is the direction of the greatest breadth of the continent, and of the great mountain-systems of Asia and Europe.

THE OASES.—The Sahara also abounds in low fertile tracts named *oases*, which are watered by perennial springs, and which not unfrequently support a numerous population. In general, they consist of the deep depressions which separate the lofty plateaux, and are therefore more numerous in the centre and east than in the west of the desert. The following are the principal oases:—

EASTERN SAHARA.—*Ghadames* 3, S.W. of Tripoli; *Fezzan*, S.E. of Tripoli, capital Mourzouk (see under "Tripoli"); *Siwah*, in the Libyan Desert, capital Siwah-el-Kebir; *Tibesti*, S.E. of Fezzan; *Bilma*, midway between Fezzan and Lake Tchad; *Air* or *Asben*, S.W. of Bilma, capital Agades; *Ahir*, W. of Bilma, capital Taboo; *Ghat*, W. of Fezzan.

WESTERN SAHARA.—*Tuat* or *Twat*, midway between Cape Nun and Mourzouk, principal towns Agably and Ain Sala or Insalah; *Hahirah*, S.E. of Tuat; *Gualata*, S.W. of Tuat; *Toudemi*, S.E. of Gualata, capital Teleg; *Arowan*, midway between Toudemi and Timbuctu; *Hoden*, W. of Arowan.

Descriptive Notes.—*Ghadames*, with about 3000 inhabitants, lies on the caravan route from Tunis and Tripoli to Timbuctu. This handful of people, secluded from the world, consists of two parties, as distinct and hostile as the rival factions of the Italian cities in the middle ages. They never intermarry. They occupy separate apartments, and never pass from the one to the other if it can possibly be avoided; but the market-place is common ground, together with the house of the native governor, and they unite against a common foe. The only explanation they can give of this remarkable feud is:—"The Ben Weleed and the Ben Wezeet are people of Ghadames who have quarrelled from time immemorial; it was the will of God they should be divided, and who shall resist his will?" *Mourzouk* (see under "Fezzan" in "Barbary States"). *Siwah-el-Kebir* (see under "Middle Egypt"). *Agades* has a population of 8000, and some leather manufactures; it is one of the most commercial entrepôts of Central Africa, being on the caravan route from Tripoli to Kashna. The oasis is reported to be eleven days' journey in extent from N. to S.,* and to be fruitful and well cultivated, producing maize, vegetables, and senna. *Agably*, about 700 miles N.N.W. of Timbuctu. Here meet the caravan routes from Marocco and Tripoli, and afterwards diverge to Senegambia and Timbuctu: it has trade in grain, cattle, and sheep.

Climate.—Notwithstanding the extreme heat, which is almost insupportable by day, there is often great cold at night, and ice is frequently formed, owing to the excessive radiation.

Rain falls in torrents at very distant intervals, in some places not oftener than once in ten or twenty years, though there are not wanting evidences of its having been at one time more frequent. Even dew is unknown, owing to the ascending currents of heated air which dissolve the vapours, and disperse the passing clouds. The desert is also visited by a burning wind from the S. and E. called the *simoom*, which generally lasts ten or twelve hours, when the air is impregnated with fine sand, which almost suffocates the traveller; and the drought is so great as to dry up the water contained in the skins carried by the camels.

Minerals.—The only valuable mineral found in the desert is salt, vast rocks of which occur in its W. division.

Botany.—Palm-trees grow on the borders of the Sahara; and the chief products of the oases are dates, gum, corn, and some vegetables. These require constant irrigation,—water being usually found by digging a few feet below the surface.

Zoology.—The fauna of the Sahara is as deficient as its flora; the lion, panther, hyena, and some other wild animals, roam over the outskirts; the ostrich and gazelle penetrate farther into the interior; the land-tortoise is common in the S., where it attains to a great size; and lizards and serpents are numerous. The only beast of burden is the camel.

Ethnography.—Two nations of Berber origin, but divided into numerous tribes, are scattered over the entire desert—viz., the Tibbous in the E., and the Tuaricks in the W. (See under "Africa," art. 18.)

The inhabitants of Ghadames form a subdivision of the Tuarick branch; but Fezzan is chiefly peopled by Arabs, Moors, and negroes. Mohammedanism is the only religion tolerated. Dialects of the Berber language—Tibboo, Tuarick, and Ghadamsi—are spoken by the Berber tribes; but Arabic, the language of the Koran, and that which is indispensable to African commerce, is also widely prevalent.

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* Caravans travel at the rate of three miles an hour for six hours daily, resting several days at the principal wells.

SENEGAMBIA.

Boundaries.—N., the Sahara; W., the Atlantic; S., Upper Guinea; E., Negritia or Soudan.

Including the British settlement of Sierre Leone, it extends from lat. 8° to 17° N., and from lon. 7° to 17½° W. Bathurst, the capital of British Senegambia, and on the central parallel, is in the same lat. as St Salvador, the S. shore of Lake Tchad, Sennaar, Mocha, and Madras.

Area.—The limits of Senegambia are not strictly defined, but its probable length from N. to S., or from the Sahara to the frontier of Liberia, is about 700 miles; breadth, from the Atlantic to Bambarra in Soudan, about 600 miles; while the area is probably about 250,000 square miles, or more than twice that of the British Isles.

Population.—The population is very considerable, perhaps from 5,000,000 to 10,000,000, but there are no reliable data to enable us to speak with precision. The state of Bondoo alone is said to have about 1,500,000 inhabitants, while the British possessions of Sierra Leone and Gambia contain about 60,000, and the French 32,000.

Political Divisions.—Besides the settlements of the British, French, and Portuguese, situated on the coast, and on the rivers Gambia, Senegal, Cacheo, and Jeba, there is a great number of small native states, peopled by tribes belonging to three great nations—viz., the Foulahs in the N.; the Jaloofs in the centre; and the Mandingoes in the S.

Native States, with their respective capitals.—FOOLAH.—Sedo 6, capital of Footatora (Guiloom, *affl.* Senegal); Boulibani 3, capital of Bondoo (Falemé); Timbo 9, capital of Footajallon (Ba-Fing); Kooniary, capital of Kasson, n. (Senegal); Bangassi, capital of Fooladoo (Voulima).

JALOOF.—Faf, capital of Waloo (Senegal); Macaye, capital of Kayor, n. (W. coast); Warneo, capital of Jaloof Proper, n. (Gambia); Cahore, capital of Salum (Jumbas); Tuabo, capital of Galam (Senegal).

MANDINGO.—Kamalia, capital of Manding (Voulima); Kemmoo, capital of Kaarta (Voulima); Bambouk, capital of Bambouk (Falemé); Baniserile, capital of Dentilla (Falemé); Jallacotta, capital of Tenda (Gambia); Medina 5, capital of Wooli (Gambia); Falaba 6, capital of Sulima (Scarcies); Kankan 6, capital of Sangara, n. (Joliba).

British Senegambia and Sierre Leone.—Bathurst 3, Ft. St James, Ft. George, Pisania (Gambia), FREE TOWN or St George 18 (Rokelle or Sierra Leone), Kambia (Scarcies).

French Senegambia.—St Louis 12, Bakel (Senegal), Ft. Goree (Cape Verde), Casamanza (Casamanza).

Portuguese Senegambia.—Bissao 8, Jeba (Jeba), Cacheo (N. arm of Rio Grande).

Descriptive Notes.—*Sedo*, on the Guiloom, in a beautiful fertile country, has 6000 inhabitants. *Boulibani*, capital of Bondoo, one of the most powerful states in Senegambia, which is said to have a population of 1,500,000. *Timbo*, a place of considerable antiquity, near the head-waters of the Senegal. *Warneo*, capital of the principal Jaloof state, which contains vast forests of gum-trees, and produces abundance of ivory, skins, and honey. *Kamalia* and *Kemmoo*, the chief towns of the two principal states of the Mandingoes in Senegambia. *Bathurst*, a seaport town, and capital of the British colony of Senegambia, on the island of St Mary, at the mouth of the river Gambia; exports gum, ivory, Senegal wax, hides, gold, tortoise-shell, rice, cotton, African teak, palm-oil, and native cloths. The colony is under the jurisdiction of Sierre Leone, and is considered to be the healthiest settlement in Western Africa. *Free Town*, capital of the British colonial settlement of Sierre Leone, in the estuary of the Rokelle, was founded in 1787, with a view of suppressing the slave-trade in Western Africa. The population consists chiefly of blacks and negroes liberated from slave-ships. The expense of supporting this colony since its foundation has been nearly £8,000,000, but no part of our annual expenditure reflects more honour on the British name. The climate is very pestilential, and the colony has been called "the white man's grave." In August 1838 upwards of 54 inches of rain fell in two days. The area of the colony is estimated at 319 square miles; and the population in 1851 was 60,000. The government is vested in a governor appointed by the Crown, and a Council of five members. The trade with Britain in 1851 amounted in value of exports to £80,366, consisting chiefly of teak, palm-oil, ginger, pepper, rice, ivory, copal, and hides. *St Louis*, capital of the French possessions in Senegambia, on an island at the mouth of the Senegal river, is the entrepôt of its trade, the principal article of which is gum (see p. 257). *Bissao*, an island and seaport town at the mouth of the Jeba, and the great stronghold of the Portuguese slave-trade, has been in the possession of Portugal for the last two centuries.

Mountains.—The Fooladoo Mountains in the N.E. separate the basins of the Senegal and Joliba; the Tengui Mountains, between the Gambia and Rio Grande. The elevation of these ranges is unknown, but it does not exceed the limit of trees.

Climate.—The climate of Senegambia is extremely unhealthy for Europeans—the heat being intense, especially about the end of the dry season (see "Africa," article 13). The *harmattan* or dry hot wind from the Sahara destroys vegetation, and cracks all articles made of wood as if they were exposed to the action of fire; but it arrests the progress of disease, and banishes the deadly fevers that prevail in the wet season.

Minerals.—Bambouk is celebrated for its rich gold-mines. The greater part of the mountains are mainly composed of ironstone, and the natives are acquainted with the art of extracting the metal.

Botany.—The country is rich in natural productions: some of the more useful trees are the magnificent baobab or monkey bread fruit-tree; the shea or butter-tree; the mimosa, from which the gum is obtained, and which forms the most important export of the country; the African teak, the caoutchouc, cabbage, mahogany, and mangrove trees; the acacia, cactus, cassia, and cardamum. The Portuguese have introduced the vine, fig, lemon, and citron; and the principal cultivated plants comprise maize, rice, millet, yams, bananas, indigo, and cotton.

Zoology.—The elephant, hippopotamus, lion, leopard, panther, striped hyena, buffalo, wild-boar, deer, antelope, hare, porcupine, monkeys of several kinds, some of which are eaten. Alligators frequent the rivers, boas the marshy places, and turtles the islands: locusts, bees, and ants are extremely numerous.

Ethnography.—The natives are superior in intelligence and civilisation to all the intertropical tribes of Africa, except the Mpongwe of Lower Guinea; and in these respects stand in the same relation to the nations around them as did the Aztecs and Peruvians to the various tribes of the New World. They are generally classed as negroes, but in physical conformation they form an intermediate class between the true negro and the Asiatic type.

The different *Languages* spoken in the country—the Mandingo, the Foolah, the Jaloof, the Susoo, the Bullom, and Sherbro-Bullom—are all so closely related as to be considered dialects of the same tongue. The Mandingo, the type around which all the others cluster, and which is the most useful to traders along the coast, is characterised by copiousness, easy enunciation, and comparative freedom from nasal and guttural sounds (see under "Guinea"). With the exception of some Jaloofs who are pagans, all the natives profess the Mohammedan faith.

SOUDAN, OR NIGRITIA.

Boundaries.—N., the Sahara; W., Senegambia; S., Guinea and the unexplored countries of Central Africa; E., Kordofan. Lat. 9° to 18° N., lon. 7° W. to 28° E. Kouka, near the centre of this immense region, on the S.W. shore of Lake Tchad, lies on the same parallel as Bathurst, Gondar, Aden, Madras, Cambodia, and Leon, the capital of Nicaragua.

Area and Population.—The area is unknown, but probably approaches 2,250,000 square miles, or twenty times the area of the British Isles. Greatest length, from Senegambia to Kordofan, about 2500 miles; greatest breadth, from Timbuctu to the Kong Mountains which separate it from Guinea, 600 miles. The population is loosely estimated at about 10,000,000.

Political Divisions.—Nigritia is divided into a great number of independent states, the principal of which, so far as known, and proceeding from W. to E., are the following:—

BAMBARRA.—Sego 30, Sansanding 10, Yamina, Bammaku (Joliba or Niger).

LUDAMAR.—Benowm, n. Yarra or Jarra (an *affl.* Senegal).

BEROO.—Walet 20 (Gozen Zair, *affl.* Niger).

JENNEH.—Jenneh 10, Isaca, Hamdallahi (Joliba).

TIMBUCTU.—Timbuctu 20, n., Kabara (Joliba).

BORGOU.—Boasa 18, Kiama 20, n. Wawa 18, n. (Joliba), Niki (Ghoulbi).

YAOURI.—Yaouri (Joliba), Tabra 20, Koolfu 15, Womba 12 (Mayarraw, *affl.* Joliba).

NYFI.—Rabba 40 (Joliba), Nyfi (Kudunia), Fundah 30, n. (Tchadda).

HOUSSA.—Kano 30, Bebeji 25, Katagoom 8 (Komaduga, *affl.* Yeou), Sackatu 80, Zirmie, n., Kashna (Zirmie or Kebbi, *affl.* Joliba), Zaria or Zegzeg 30 (Kudania).

ADAMAWA.—Yola or Jalo (Tchadda).

MANDARA.—Mora, n., Delow 10 (Serbeuel, *affl.* Shary).

BORNOU.—Kouka 10, Angornou 30, New Birni (Lake Tchad), Deegoa 30, Affagay 20 (S. of Lake Tchad).

BAGIRMI OR BEGHARMI.—Masena or Mesna, Kernac-Legone (Shary, *affl.* Lake Tchad).

KANEM.—Maoo, n., Berri (Lake Tchad).

WADI, BERGOO, OR DAR-ZALEH.—Wara, n., 50 (Bahr-el-gazel, *affl.* Lake Fittré).

DARFUR.—Kobbe 6, Zeghawa (an oasis in the desert).
FERTIT.—Fertit (White Nile).

Descriptive Notes.—*Sego*, capital of Upper Bambarra, has numerous mosques, and is the seat of considerable traffic. Near this place Mungo Park first saw the Niger, July 1796. "Here," he writes, "I saw with infinite pleasure the great object of my mission—the long-sought-for majestic Niger, glittering to the morning sun, as broad as the Thames at Westminster, and flowing slowly to the eastward. I hastened to the brink, and having drunk of the water, lifted up my fervent thanks in prayer to the Great Ruler of all things for having thus far crowned my endeavours with success." *Benowm*, a principal caravan station on the route from Senegal to Timbuctu. *Yarra:* here Major Houghton, the African traveller, was killed in 1791. *Walet*, capital of Beroo, on the caravan route from Benowm to Timbuctu. *Jenneh*, capital of Lower Bambarra, a large, well-built town on an island in the Joliba, and the seat of a great trade. It was visited by Caillié, a French traveller, in 1828. *Timbuctu*, on the borders of the Great Desert, and ten miles N. of the Joliba, at its great bend, is a considerable town three miles in circumference, with eight mosques and 20,000 inhabitants. It is meanly built in a sandy plain, and provisions have to be imported from Jenneh, 300 miles distant. To Europeans, this is the best-known place in Soudan, having been visited by many travellers. It is the principal entrepôt for the trade between Guinea, Senegambia, and Barbary. *Kabara*, the port of Timbuctu. *Boosa:* here Park was murdered by the natives while descending the river in a canoe. *Rabba*, a populous town, with an extensive trade in slaves and ivory. *Kano*, capital of the empire of the Fellatahs, has great trade, and manufactures of silk. *Sackatu*, the most populous and important city in Central Africa, has great trade with Guinea and Tripoli; it has important manufactures of blue cloths, and was the scene of Clapperton's death in 1827. *Yola*, near the Benué or Tchadda, about 350 miles above its junction with the Joliba. Dr Baikie was the first European who visited this region; he navigated the river for 400 miles above its confluence with the Niger, and has thus opened a new highway for British commerce, and rendered a service to civilisation which it would be difficult to over-estimate. *Mora*, capital of Mandara, visited by Barth in his recent travels around Lake Tchad. *Kouka*, the capital of the powerful kingdom of Bornou. Dr Barth states that it is 900 feet above the sea-level, and 50 feet above that of the lake. *Angornou*, the most important town in Bornou, on the margin of Lake Tchad, has a great weekly market, and is the centre of an extensive trade in slaves, cotton, amber, coral, and metals. *Kernac*, famed for the manufacture and dyeing of cotton goods. *Maoo*, capital of Kanem, a kingdom situated between Lake Tchad and the Sahara. *Warra* is described as large and populous, but it is little known to Europeans. *Kobbe*, in an oasis of the eastern desert, is a place of great resort for caravan merchants.

Mountains.—The Kong Mountains, between the Gulf of Guinea and the basin of the Niger, extend from Sierra Leone to the Joliba; Mount Rennel, 3200 feet high; Soracte, 1278 feet.—(See under "Africa," art. 6.)

River System.—(See under "Africa" and "Guinea.")

Lakes.—*Tchad*, in the centre of Soudan; *Fittré*, E. of Lake Tchad; *Debo*, on the Joliba, 200 miles S.W. of Timbuctu.

The first-mentioned is a great fresh-water lake in the centre of the continent, about 150 miles from N. to S., 125 miles from E. to W., and having a probable are of 15,000 square miles, being about one-half the area of Lake Superior. Its usual depth varies from 8 to 15 feet, and it is 850 feet above the sea. It receives two large rivers, the Yeou and the Shary, and contains many islands which are densely inhabited. It appears to have been known to Leo Africanus in the sixteenth century, but was first visited in modern times by Denham early in the present century, and very recently by Vogel, Barth, Overweg, and others.

Climate.—The climate of Western and Central Soudan considerably resembles that of Senegambia and Guinea; that of Eastern Soudan is still very imperfectly known. It is everywhere tropical and intensely hot, while the year consists of two seasons—the dry or hot season, and the rainy.

The dry season continues from March to June, when the thermometer, at mid-day, stands in the shade at about 107°, and even during the night rarely sinks below 100°. The rainy season commences in June; violent thunderstorms rage, accompanied by heavy rains, cloudy weather, and a damp, sultry atmosphere. The rivers overflow their banks, and inundate large tracts of the country. According to Denham, the mean annual temperature of Central Soudan is 81°.

Minerals.—The only important minerals occurring in Soudan are iron and gold. The former is obtained from the ironstone so prevalent in all parts of the country. The natives possess the art of extracting the metal, and of converting it into numerous useful implements. Gold dust is abundant in the rivers, and forms, with iron, the principal article of export across the desert. The caravans bring home, in exchange, salt from the States of Barbary — a commodity which is extremely deficient in all parts of Central Africa.

Botany.—The botany of Central Africa is still very imperfectly known, notwithstanding the great number of travellers that have visited portions of it. In Western Soudan there are no forests, properly so called, but baobabs, sheas, cotton-trees, and nedés are numerous in many parts.

Millet is extensively cultivated, which, with maize and cassava, yields two crops a-year. In Central Soudan trees are scarce, except the palm-oil, cocoa-nut, and india-rubber trees; but other products are extremely various. Wheat succeeds in the more elevated tracts; but the grains generally cultivated are rice, maize, Guinea-corn, and millet. Cotton, tobacco, and indigo are grown in large quantities, as also yams, sweet potatoes, beans, water-melons, musk-melons, onions, plantains, and bananas. Fruit-trees comprise figs, pomegranates, limes, papaws, sheas, mangoes, &c.: date-trees are common to the E. of Lake Tchad.

Zoology.—The hippopotamus and alligator are found in great numbers in the Joliba. Among other wild animals are the elephant, lion, tiger, hyena, tiger-cat, jackal, leopard, wild-hog, wolf, antelope, buffalo, wild-horse, wild-hog, zebra, squirrel, monkey, deer, and ostrich; while the domestic comprise the camel, goat, sheep, ass, horse, ox, and poultry. Birds exist in great numbers and in boundless varieties; they are often remarkable for the beauty of their plumage, especially the paroquets and humming-birds. The whole region is much infested with noxious and venomous reptiles, and insects of countless species swarm in all directions.

Ethnography.—Soudan has been for ages immemorial the home and headquarters of the negro race: here the black man attains his highest physical development; here his mental and moral qualities are most easily studied; and here is seen the extent to which he has been enabled to go in the march of civilisation, without the teaching and influence of more highly-favoured races. (See p. 63.)

As existing in his own beloved Soudan, the negro is far from being that miserable-looking and degenerate creature which he seems to be when long subjected to the bondage and inhuman treatment of the white man. Though beyond doubt somewhat inferior to the Caucasian in mental endowments, he is fully his equal in stature and physical strength, while even intellectually he is greatly superior to most of the native races of the other continents, especially those of Australia and America. His moral nature is indeed deeply degraded—a result, however, which is to be attributed more to his religion and geographical position than to any inherent ferocity of disposition. It is only by a stretch of language that the people of Central Africa can be called savages; for though they have not invented the art of writing, and nowhere possess a written alphabet, or even the picture-writing of other semi-civilised nations, they have nevertheless made considerable attainments in other useful arts. Agriculture, for example, is practised over the whole of Nigritia, though the plough is an implement unknown in their husbandry. They irrigate the land by artificial processes; various species of grain are raised; and in some places the produce of the field is stored in large granaries raised on poles as a security from insects. Oxen are reared in great numbers; cotton is everywhere grown, and indigo of the finest quality is produced in great abundance. Manufactures, though not numerous, are carried on with considerable skill and activity—the most important, by far, being that of cotton-cloth, which is beautifully woven by the women, and very tastefully dyed. They are able, moreover, to extract the iron from its native ore, and to convert it into many useful implements; and they evince skill and taste in the various ornaments of gold which they construct.

For the *Languages* spoken in Soudan, all of which belong to the Nigro-Hamitic group, see under "Africa," art. 18.

GUINEA.

The term Guinea is applied to an immense region of Western Africa extending along both sides of the gulf of that name from the eastern frontier of Sierra Leone to Cape Negro. It consists of two great divisions—viz., *Upper Guinea* in the N., between the Kong Mountains and the Gulf of Guinea (lat. 0°—9° N., lon. 12° 39′ W.—10° E.); and *Lower Guinea* in the S., extending from the equator to Cape Negro (lat. 15° 41′ S.), having the Atlantic Ocean on the W., and the unexplored regions of Central Africa on the E. The equator, which separates Upper from Lower Guinea, passes over Quito and the mouth of the Amazon in South America, the island of St Thomas and the mouth of the Juba in Africa, and the centre of the islands Sumatra and Borneo in Malaysia.

Area and Population.—Upper Guinea extends from W. to E. about 1500 miles; the breadth, from the Kong Mountains to the Gulf of Guinea, is about 300 miles; while the probable area amounts to 360,000 square miles. The length of Lower Guinea from N. to S. is 1140 miles; its maximum breadth, 300 miles; and its probable area, 240,000 square miles. The total area is, therefore, about 600,000 square miles, or five times the dimensions of the British Isles. The population is extremely uncertain, but probably amounts to 10,000,000, or half the population of Great Britain.

Political Divisions.—The political divisions are fluctuating both in number and extent, but the following are the principal:—

UPPER GUINEA.

LIBERIA.—Monrovia 2, Bexley (coast).

GOLD COAST.—Cape Coast Castle 10, Elmina 10, Fort St James, Crevecœur, Christiansborg, Dickscove (coast).

ASHANTEE.—Coomassie 18 (Dah, *afft.* Chama), Salagha (Volta), Yandi (Loka, *afft.* Volta).

DAHOMEY.—Abomey 30 (lat. 7½° N., lon. 1° 40′ E.), Calmina 15 (S. of Abomey), Whyboo (S. of Calmina), Whyda 7, Ardrah 20, n., Badagry 20 (coast).

YARIBA.—Eyeo or Katunga 20, n., Egga, Kakunda (Niger), Bohou, Kooso 20, Burgho, Doufo 15, Asoudon 10, Jenna 10 (between the capital and Badagry).

BENIN.—Benin 15 (Formosa, arm of the Niger), Bonny 20 (Bonny, arm of the Niger), Abbeokuta, 60 (W. of Bonny).

WARI AND EBOE.—Wari, 5 (Wari, arm of Niger), Eboe or Ibou 6, Kirree (Niger).

ATTAH.—Attah or Iddah 8, Damuggo or Adamugu (Niger).

QUA OR OLD CALABAR.—Bongo or Old Calabar, Ephraim Town 6 (Old Calabar), Wukari (N.N.E. of Kirree).

BIAFRA.—Biafra (Donga), Naonga or Adjumba (Gabon).

LOWER GUINEA.

LOANGO.—Loango 15, Mayumba, Caconga, Cabenda (coast).

CONGO.—Banza-Congo or San Salvador 20, n., Punto de Lenha (Congo or Zaire), Ambriz (coast).

ANGOLA.—St Paul de Loanda 12 (coast), Icollo-i-Bengo 7 (Bengo).

BENGUELA.—San Felipe de Benguela 3 (coast), Massangana 1, Cazengo (Coanza), Bailundo (Cuvo), Caconda (S.E. San Felipe).

Descriptive Notes.—*Monrovia*, capital of a small but extremely interesting free negro republic, established in 1848 as a place of refuge for free blacks from the United States of America, and for captives released from slavers. Area, 20,000 squate miles. Population, 200,000, about 50,000 of whom use the English language. As an experiment for the suppression of slavery, it has proved eminently successful. In 1843 there were twenty-three places of worship, sixteen schools, and two public journals. Agriculture is extensively pursued; the climate has been greatly improved by drainage, &c.; and commerce is extremely flourishing. *Cape Coast Castle*, the capital of the British settlements on the Gold Coast, which extend from the river Assine on the W. to the Volta on the E. The English first settled here in 1664, and the settlements now consist of numerous forts along the coast, erected and maintained at an enormous expense, for the purpose of mitigating the inhuman traffic in slaves. The climate is extremely unhealthy, and the sacrifice of life on shore and on board the naval squadron is very great; but no portion of our annual expenditure reflects greater honour on the British name. *Elmina*, the capital of the Dutch possessions on the Guinea coast, contains the strongest fort on the gulf. *Crevecœur* and *Christiansborg*, formerly belonging to Denmark, were ceded to Britain in 1850. *Coomassie*, capital of the Empire of Ashantee, the most powerful native state in Upper Guinea; area uncertain; population about 1,000,000. Several neighbouring kingdoms are tributary to Ashantee, but its power received a great check at the hands of the British in 1826—the Ashantees having attacked one of our settlements. The town is fortified, and has an active trade in gold-dust and palm-oil, and the inhabitants are courageous, intelligent, and skilful in various kinds of manufacture. *Salagha*, capital of the kingdom of Inta, tributary to Ashantee, is large and populous, and one of the most commercial towns in the empire. *Yande*, capital of the kingdom of Dagoumba, tributary to Ashantee, is the residence of a Mohammedan sovereign, and a large commercial place. *Abomey*, capital of the powerful kingdom of Dahomey, is a large populous town wholly built of clay—there being no stones found nearer than the Kong Mountains. It is much resorted to by merchants from all parts of Africa in quest of slaves, palm-oil, ivory, &c., all of which are exported at *Whydah*, 90 miles distant. The inhabitants of Dahomey are extremely barbarous; human sacrifices are practised, and the most absolute and unmitigated tyranny prevails. *Kyeo* or *Katunga*, capital of Yariba, is said to be fifteen miles in circumference, but contains numerous fields and other open spaces. Clapperton visited Eyeo in December 1825, and gives an interesting account of his journey. The king boasted that his wives, linked hand in hand, would reach entirely across the kingdom. Queens, however, in Africa, are applied to various uses, of which Europeans have little idea. The inhabitants are wholly unacquainted with the use of letters. *Egga*, a large populous city, 70 miles above the confluence of the Niger and Tchadda; the houses are built of clay, and of a conical form. The inhabitants trade largely on the rivers, and possess a great number of vessels for that purpose. *Benin*, capital of a state of same name, stands on the western arm of the Niger, 70 miles above its mouth: it was at one time the great emporium of the slave-trade in this region. Here Belzoni, the traveller, died in 1823. *Abbeokuta*, capital of the kingdom of Egba, subject to Benin, and the most populous town in Guinea. In consequence of missionary operations, civilisation has made great progress here. *Eboe*, *Ebou*, or *Aboh*, capital of a small state of same name, on the right bank of the Niger, is one of the principal commercial marts in the lower basin of that river, but is extremely unhealthy. *Attah* or *Iddah*, on the left bank of the Niger, is a place of great extent, and carries on extensive manufactures in cotton cloth, tanning, and iron. *Bongo* or *Old Calabar* is the capital of the kingdom of Qua, but *Ephraim Town* is the principal seat of commerce.

LOWER GUINEA.—*Loango*, the chief town of a state of same name, situated S. of Biafra, is 10 miles in circumference, and contains about 15,000 inhabitants. *Mayumba* or *Malemba*, a great slave-market on the coast. *Benza-Congo* or *San Salvador*, a large town near the Congo or Zaire, and the residence of a chief who claims supremacy over several petty states in the neighbourhood. *Punto de Lenha;* here are numerous Portuguese, English, and American cotton-factories, and room for more if the bush were cleared away. The wild cotton, growing in abundance, is of good quality, and easily separated from the seed. Vessels lie here in deep water alongside the wharves, and the climate is tolerably healthy. *St Paul de Loanda*, capital of the Portuguese dominions in Western Africa, has a good harbour, and exports slaves and ivory; cotton is also exported, and its cultivation encouraged by the present governor. Loanda was visited by Dr Livingstone in 1854, who describes it as in a state of decay. *Benguela* or *San Felipe de Benguela*, a seaport town, and the Portuguese capital of Benguela. Its principal inhabitants are slave-dealers. In 1838 nearly 20,000 slaves were exported.

The River System of Senegambia, Guinea, and Soudan.

Basins inclined to the Atlantic Ocean.

Rivers.	*Towns.*
Senegal and Ba-Fing,	FORT ST LOUIS, FAF, Daganna, Tuabo, Bakel, Fort St Joseph, KOONIARY, Timbo.
Guiloom, *l*	SEDO, capital of Footatoro.
Ba Falemé, *l*	Fatteconda, n., Boulibani, BAMBOUK, n., BANISERILE.
Voulima,	Kemmoo, n., Bangassi, Kamalia.
Gambia,	BATHURST, Fort St James, Baidiboo, n., Warnow, n., Fort George, Pisania, Medina, Jallacotta.
Rio Grande,	Cacheo, on the Cacheo or N. arm; Bissao and Jeba, on the Jeba or middle arm; Bissagos and Kade on the main river.
Nunhez,	Kakundy.
Scarcies,	Kambia, FALABA.
Rokelle,	FREE TOWN, KAMATO.
St Paul,	MONROVIA, capital of Liberia.
Assiné,	W. boundary of Gold Coast.
Chama,	ELMINA, n., CAPE COAST CASTLE, n.
Dah, *l*	COOMASSIE, capital of Ashantee.
Bosempre, *l*	Bannasoo.
Volta,	Salagha, Banda.
Loka, *l*	Yandi.
Senni,	Guia.
NIGER OR JOLIBA,	BENIN, on the Benin or W. arm; WARI, on the Wari arm; Bonny, on the E. arm; EBOE, Kirree, Damuggo, ATTAH, Kakunda, Egga, EYEO or KATUNGA, n., Rabba, Kiama, n., Wawa, n., BOUSSA, YAOURI, Gago or Garo, TIMBUCTU, n., *Kabara*, Hamdallahi, Isaca, JENNEH, Sansanding, SEGO, Jamina, Bammakoo, KANKAN, n.
Tchadda, *l*	Funda, n., YOLA or JALO.
Kudunia, *l*	Nyfi, ZARIA, capital of Zegzeg.
Ghoulbi,	Niki.
Majaro or Mayarrow, *l*	Tabra, Koulfu, Womba.
Kebbé or Zirmie, *l*	Sockatu, Zirmie, n., Kashna.
Gozen Zair, *l*	WALET, capital of Beroo.
Ulaba,	Isaca.
Calabar,	BONGO or OLD CALABAR, Duke Town, Ephraim Town.
Cameroon,	King Bell's Town.
Donga,	BIAFRA.
Gabon,	*Adjumba.*

Rivers.	*Towns.*	*Rivers.*	*Towns.*
Zaire or Congo,*	BANZA-CONGO or SAN SALVADOR, n., Punto de Lenha.	Coanza, ...	*Massangano*, Cazengo, n., Capelle, Bihé or Caquenha, n.
Quango, ...	*Casangé*, n.	Orange or Gariep,	See under "Cape Colony."

Basin of Lake Tchad.

Yeou, ...	*Bossa, Jacoba.*	Serbenel, *l*....	Delow, MORA, n.
Komaduga, *l* ..	Katagoom, Bebeji, KANO.	W. and S. coast,	KOUKA, Angornou, New Birni, Deegoa, Affagay.
Shary, ...	Karnac-Legone, Masena.		

Climate.—The climate of Upper Guinea is tropical, and not essentially different from that of Senegambia and Nigritia. The coasts are low and unhealthy; the heat very great, though less intense than in the regions farther north.

The year is divided into two seasons—a wet and a dry; the former commencing early in June, when the quantity of rain that falls is inconceivably great. It is followed by a short foggy season, of about two or three weeks' duration, which is extremely deleterious to human life. The dry season commences in November, and continues till May. At Cape Coast Castle, which is considered the hottest part of the coast of Upper Guinea, the thermometer during the hottest month varies from 85° to 90°. Loango, Congo, and Angola, in Lower Guinea, are reckoned healthy and agreeable, as is also the interior of Benguela; but the maritime regions of the whole of Lower Guinea are very pestilential, owing to the constant evolution of sulphureted hydrogen gas given out by the mud and detritus borne down by the rivers.

Minerals.—The only important mineral production of Upper Guinea is gold, which abounds chiefly in Ashantee. It is found not only in the form of dust, but also in large nuggets, by digging from five to nine feet. In Lower Guinea are found gold, silver, lead, copper, sulphur, and petroleum.

Botany and Zoology.—These are in general the same as in Senegambia and Nigritia.

Ethnography.—The people are all of the Negro race, and generally in a very low stage of civilisation. Their religion consists of various forms of paganism (chiefly Fetichism), except the Mandingo tribes in the extreme W., who are Mohammedans, and certain tribes in Angola and Benguela, who have embraced a spurious form of Christianity from the Portuguese colonists. Slavery and polygamy are everywhere prevalent; human sacrifices are practised by several tribes, and morality is at its lowest ebb.

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* This river, which still remains for the most part unexplored, is beginning to excite great attention, not only in the scientific but also in the commercial world. Great hopes are entertained that it will become ere long the great commercial route into the interior of the continent. Unlike the Zambezé, which is not navigable for sea-going ships, owing to the bar at its mouth, the Congo has no bar—having 150 fathoms water at its mouth; it is navigable for large ships for nearly 100 miles (the slave-traders, indeed, report that it is navigable for 600 miles above the rapids); it flows through a rich country, which produces in abundance palm-oil, ground-nuts, copper-ore, gum, bees'-wax, lignum vitæ, and two crops of excellent cotton annually; and, above all, it is vastly nearer England than the Zambezé, while the dangers of the Cape of Good Hope and the Mozambique Channel are avoided.

The LANGUAGES are numerous, but those in Upper Guinea may be reduced to five distinct groups or families, which have few characteristics in common; while those of Lower Guinea all belong to one family, the dialects of which are spoken throughout all Southern Africa, from the Atlantic to the Indian Ocean, and from the Mountains of the Moon to Cape Colony. This great family, taking the Mpongwee, spoken between the Gaboon and Zaire, as a specimen, is remarkable for its beauty, elegance, and perfectly philosophical arrangement, as well as for its almost indefinite expansibility. It differs essentially and radically from all the languages N. of the Mountains of the Moon. The five families of languages spoken in Upper Guinea are the *Mandingo*, spoken from the Senegal river to Cape Mesurado (see under "Senegambia"); the *Grebo* or *Mandoo*, from Cape Mesurado to St Andrews, on the Grain Coast, and embracing the Grebo, Basa, Kru, and other dialects; the *Kwakwa*, along the Ivory Coast, presenting no traceable affinity with any other African tongue; the *Fanti*, including the Ashanti, Dahomey, Popoe, and other dialects, extending eastward to Badagry, where the Yariba commences—a language closely allied to the Mandingo and Haussa, and extending inward a great way along the right bank of the Niger; the *Waree*, extending along the Bight of Benin, and embracing the delta of the Niger.

COUNTRY OF THE HOTTENTOTS.

Boundaries.—N., Benguela; W., the Atlantic; S., Gariep or Orange River; and E., the Fish River (which separates it from the Kalahari Desert) and the country of the Bechuanas. Lat. 16° to 28° 30′ S.

Area and Population.—These are wholly undetermined; but the former approaches to that of Cape Colony, which is 240,000 square miles. This extensive region, of which so little is known, is said to be very thinly peopled.

Surface.—The coast consists for the most part of low, sandy plains; the interior, extending on the east to the confines of the Kalahari Desert, is elevated and mountainous. The Omotako Berg, in the Damara country (lat. 21° S., lon. 18° E.), extends to the height of 8739 feet. The chief rivers are the Nourse, separating it from Benguela; the Swakop, flowing westward into Walvish Bay; and the Orange, on the S., with its tributary the Fish or Great Fish River. The soil is in general light, sandy, and thinly clothed with tufted grass. Some plains in the interior are said to be fertile and clothed with pasture, with here and there copious fountains which afford eligible situations for permanent habitations. Rain is rarely seen in this country, and the inhabitants frequently suffer great hardships from the want of water. (See under "South-Central Africa," art. *Bakalahari.*)

Divisions.—Numerous tribes of Hottentots occupy this extensive region, among which may be mentioned the Oimba, Kaoka, Ovampo, Cimbebas, and Damaras—all north of the river Swakop; the Bosjesmans or Bushmen, and the Great Namaqua, between the Swakop and the Gariep; and the little Namaqua, south of the Gariep, and extending into the British territory. Other existing tribes are the Gonaqua and Koraqua; while no fewer than fifteen tribes are said to have become extinct. Properly speaking, there are no towns; but the villages, or kraals, formed of a labyrinth of little conical hovels, reared of twigs and earth, or of a few poles covered with skins, are numerous—the principal of which are Ondonga in the north, Damara and Wesleyvale in the east, and Bethany and Jerusalem in the south.

Ethnography.—The Hottentots, who in all probability formed the aborigines of the southern part of Africa, and who are now the only really nomadic race in this part of the continent, are distinguished from the other neighbouring races—the Negroes, Bechuanas, and Kaffres—by numerous striking characteristics, and are generally regarded as the most deformed and repulsive section of the human family.

They are low in stature, with slight limbs, prominent cheek-bones, depressed profile, protruding lips, flat noses, brown or yellowish-brown skin, and black woolly hair, which grows in small isolated tufts at a considerable distance from each other. The head and body is always invested with a thick coating of butter or grease, which makes the odour to a stranger highly offensive. They are extremely lazy and indolent in their habits, and never cultivate the soil. Some of the tribes derive their subsistence from roots, gums, and a kind of bread which they make of the pith of the palm-tree; others feed on ants, spiders, snails, caterpillars, and dried locusts; and others still, on the produce of their cattle or of the chase, in which they evince considerable skill and activity. The Hottentots carry on various little manufactures of domestic articles, such as tanning and dressing skins, forming mats of flags and bulrushes, bowstrings from the sinews of animals, and even knives from iron, which they are able to mould into shape. Their form of government resembles that of other pastoral tribes in Africa. They are singularly destitute of the devotional feeling. Such of them as can be said to have any religion are Fetichists; but not a few have embraced Christianity. The Hottentot language, properly so called, is now nearly extinct, but it is represented by the Namaqua and other dialects, which together form the "Click family," characterised as harsh and inharmonious, but said to possess several affinities with those prevailing north of the equator and beyond the Kaffre area.

CAPE COLONY, NATAL, AND KAFRARIA.

Boundaries.—N., the Orange River, with its affluent, the Vaal, separating it from the countries of the Bosjesmans and Bechuanas; W., the Atlantic; S. and E., the Indian Ocean; N.E., the Tugela, separating it from Amazula or country of the Zulus. Lat. 26° 40′ to 34° 51′ N.; lon. 17° 10′ to 31° 10′ E.

Cape Town, the capital of Cape Colony (lat. 33° 56′, lon. 18° 28′), is situated nearly on the same parallel as Valparaiso, Buenos Ayres, and Sydney; and on the same meridian as Stockholm, Danzic, Buda, Mostar, and Otranto.

Area and Population.—The area is estimated at about 240,000 square miles, or twice the size of the British Isles. The population is very uncertain, but probably does not exceed one million, including 30,000 Hottentots in Cape Colony, and 100,000 Zulus or Kaffres in Natal.

Political Divisions.—With the exception of Kafraria, which is ruled by native chiefs, the whole of this immense territory is under British sway. Two extensive tracts, however,—viz., Victoria, or Little Namaqua Country, and the Orange River Republic—the one lying N. of the settled provinces of Cape Colony, and the other N.E. of them,—are merely nominal dependencies of the British crown. The area and population of the different divisions, so far as ascertained, are as follows:—

Divisions.	Area in Square Miles.	Population.
Cape Colony	118,256	285,279
Natal	18,000	121,000
Victoria or Little Namaqua	40,000?	
Orange River Republic	50,000	
Kafraria	15,000?	67,358
Total	241,256	1,000,000?

Cape Colony.—Two provinces and sixteen districts.

CAPE DISTRICT.—CAPE TOWN 24 (Table Bay), Simon's Town (Simon's Bay).

STELLENBOSCH.—Stellenbosch 3 n. (False Bay).

ZWELLENDAM.—Zwellendam 2 n., Port Beaufort 5 (Breede).

WORCESTER.—Worcester (Breede).

CLANWILLIAM.—Clanwilliam (Olifant's River).

BEAUFORT.—Beaufort 6 (Gauritz).

GEORGE.—George Town n. (S. Coast).

UITENHAGE.—Uitenhage (Zwartkops), Port Elizabeth 3 (Algoa Bay).

GRAAF REYNET.—Graaf Reynet 3 (Sunday River).

COLESBERG.—Colesberg n. (Sea Cow, *affl.* Nu Gariep).

ALBERT.—No towns.

CRADOCK.—Cradock (Great Fish River).

SOMERSET.—Somerset (Great Fish River).

ALBANY.—Graham's Town 4, Bathurst n. (Kowie).

VICTORIA.—Alice, Fredericksburg (Coast).

BRITISH KAFRARIA.—King William's Town n. (Buffalo).

Natal.—PIETERMARITZBURG 2 (*affl.* of the Omgani), D'Urban (Port Natal).

Victoria or Little Namaqua Land.—PELLA (Orange River).

Orange River Republic.—PHILLIPOLIS n. (Nu Gariep).

Kafraria.—BUTTERWORTH n., Morley n., Bunting n. (E. Coast).

Descriptive Notes.—CAPE TOWN (Dutch, *Kaapstad*), the capital of the British possessions in Southern Africa, is situated on the southern shore of Table Bay, at the foot of Table Mountain, and 31 miles N. of the celebrated promontory from which it derives its name. It was founded by the Dutch in 1650, and has all the appearance of a Dutch town—the streets being parallel and crossing at right angles, and always kept extremely clean. The public buildings are numerous and substantial, including fifteen churches, the South African College, the South African Institution, and a royal marine and a magnetic observatory, rendered famous by the labours of Sir John Herschel. There is also a public library containing 30,000 volumes, and a valuable botanic garden. The population is composed of Dutch, English, Negroes, Malays, and Hottentots. The town is defended by a castle of great strength and other lesser forts. The other towns of the colony are all very small, often indeed mere villages. *Simon's Town*, an important station for shipping, contains the Government arsenal. *Port Beaufort*, at the mouth of the Breede, with a good harbour and considerable trade. *Port Elizabeth*, the principal shipping port for the eastern province. *Graham's Town*, 600 miles E. of Cape Town, is the chief place in the eastern province; population exclusively English. *King William's Town*, the principal place in British Kafraria, 62 miles N.N.E. of Graham's Town, has the aspect of an English village, but has been much injured by the Kaffre wars. *Pietermaritzburg* is neatly laid out in the form of a parallelogram, but only partially built. *D'Urban*, formerly *Port Natal*, on the N. shore of a fine inlet of the ocean, is the port of the colony. Its exports in 1844 amounted to £11,094, and its imports, which are chiefly obtained from Cape Town, to £41,141. It is rapidly rising in importance. *Pella*, on the Orange River, is little more than a missionary station.

Capes.—Cape of Good Hope, the S. extremity of the Cape district; Paternoster Point, the N.W. extremity of the same; Agulhas, in district Zwellendam, the southernmost point of the Continent; St Francis and Recif, S. of Uitenhage.

The first-named was discovered by Diaz, a Portuguese admiral, in 1486, who called it "Cape of Storms;" elevation 1000 feet. Cape Agulhas, latitude 34° 51′ S., gives its name to an extensive sandbank, and to an important current which flows from the Indian to the Atlantic Ocean.

Bays.—St Helena Bay, N. of Cape district; Saldanha Bay, Table Bay, W. of do.; False Bay, S. of Stellenbosch; Walker's Bay, and St Sebastian's Bay, S. of Zwellendam; Mossel and Plettenburg, S. of George; Algoa, S.E. of Uitenhage; Port Natal, E. of Natal.

Saldanha Bay is one of the finest imaginable, and affords good anchorage at all seasons. On its W. side is a station of the Dutch East India Company. *Table Bay* is capable of sheltering the largest fleet, and, excepting from June to August, always affords good anchorage. *False Bay* is the principal station of the Cape naval squadron.

Surface and Mountains.—The country consists of a series of plateaux rising in successive terraces from S. to N., and separated by mountain chains. The only passage from one of these terraces to another is by narrow and difficult mountain gorges, named *Kloofs*, some of which have been made available for wheeled carriages. These terraces are called *Karoos*, the largest of which—the Great Karoo—is an arid desert 200 miles long, 50 miles broad, and 2000 feet high. The mountain-chains are three in number, and parallel to each other, as also to the S. and S.E. coasts.

1. The ZWELLENDAM MOUNTAINS, of moderate elevation, proceed from Table Mountain, in the Cape district, for 200 miles eastward, and at an average distance of 20 miles from the south coast. Height of Table Mountain, 3816 feet. It owes its name to its peculiar form, which resembles a table in shape, and having a flattened summit. It is often covered with a white mist, locally named "The Table-cloth." 2. The ZWARTE or Black Mountains, about 30 miles farther inland, and separated from the former by the plateau of Kannaland. In some places they attain an elevation of 4000 feet. 3. The NORTHERN CHAIN, which forms the watershed between the basin of the Orange and those of the other rivers of the country, and which is separated from the Zwarte Mountains by the Great Karoo. It receives different names in its course from W. to E., as *Roggeveld* in Clanwilliam, *Nieuveld* in Beaufort, *Winter Mountains* in Graaf Reynet, *Sneeuw Bergen* in Cradock, *Witte Bergen* and *Ingali* Mountains in Albert, and *Drakenberg* or *Quotlamba* Mountains in Kafraria and Natal. Compass Berg or Spitzkop, 10,200 feet high, is the culminating point of the chain, and of all South Africa.

Rivers.—These are numerous, but being generally very small, and interrupted by rapids and sandbanks, they are not navigable; and their beds being considerably depressed below the general surface, they are ill adapted for the purposes of irrigation, while many of them are quite destitute of water in the dry season. The following are the principal:—

The *Orange River* or *Gariep*, in the N., separating the Colonial territory from the interior: its principal branch, the Ki Gariep or Vaal, rises in the Kashan Mountains, at an elevation of 10,000 feet above the sea. The river pursues a general W. course of 1000 miles, and falls into the Atlantic after receiving the *Fish* and *Nosop* on its right, and the *Visch* or *Harlebeest*, *Brak*, and *Nu Gariep* on the left. *Olifant* or *Elephant* River enters the Atlantic midway between the Orange and Cape Town; chief affluents, the *Doorn* and *Hautam*. The *Breede*, in Worcester and Zwellendam, enters the Indian Ocean at Fort Beaufort: it is one of the largest and deepest rivers of the colony, but its navigation is impeded by a sandbank at its mouth. The *Gauritz* separates the districts of Zwellendam and George, receiving as affluents the Olifant and Gamka. The *Camtoos*, in Uitenhage, 200 miles long, receives the Salt River and Kouga. The *Sunday River*, from Graaf Reynet, falls into Algoa Bay. The *Great Fish River*, between Albert and Victoria; the *Keiskamma* between Victoria and British Kafraria; the *Buffalo* in British Kafraria; and the *Great Kei*, between British and Native Kafraria, all flow S.E. to the Indian Ocean.

Climate.—The climate is mild and healthy, but very dry, remarkably free from epidemic diseases, though few of the inhabitants attain to an advanced age.

On an average about 22 inches of rain fall annually at Cape Town; but the interior and W. coast are almost without a parallel for dryness. In the Great Karoo no rain falls sometimes for three years in succession. Snow falls only on the mountains, the highest peaks of which are covered by it for six months in the year. The entire territory lies between the mean annual isotherms of 64° and 68° Fah. The hottest months are December and January, when the thermometer sometimes rises to 94°; while in the coldest months, June and July, it descends to 57°.

Minerals.—Gold has been discovered in the basin of the Orange River; a great deposit of rich copper ore occurs near its mouth; and salt is obtained for consumption and sale from salt lakes, the most considerable of which is near Algoa Bay. Mineral springs, some of them warm, are met with in various places; and a species of soda, found in the Great Karoo, is employed in the manufacture of soap.

Botany.—Southern Africa is comprised within "Schouw's 23d Phytogeographic Region," the flora of which is of a peculiar and varied character, rich in forms, but not luxuriant.

There are no large dense forests; succulent plants are numerous, climbing plants few. It is emphatically the region of *Stapeliæ*, *Mesembryanthema*, and *Ericaceæ* or heaths, the last-mentioned being more numerous here than anywhere else. No fewer than 400 species of heath are enumerated in this region. The principal indigenous tree in the vicinity of Cape Town, is the Witteboom or Silver Tree, conspicuous for the brilliant silky whiteness of its leaves. The Table Mountain is remarkable for the *Disa grandiflora*, a splendid flowering plant not known to occur in any other locality. There are few native plants useful to man found in the colony, but many such have been introduced, as the European cereals, fruits, and esculent vegetables; also sorghum caffrorum, batatas, plantains, tamarinds, and shadocks. More corn is raised than is necessary for consumption, and the cultivation of the vine is an important source of wealth. A vineyard at the foot of Table Mountain produces the celebrated liqueur named *Constantia*. Aloes is also largely exported.

Zoology.—Colonisation has driven many of the larger wild animals beyond the north frontier.

The lion, hyena, buffalo, hippopotamus, and zebra, are occasionally seen; the rhinoceros is rarely met with, and the elephant has retreated beyond the Gariep. The ostrich and eagle are the most remarkable of the birds; the secretary or snake-eater is a useful bird of prey, as it feeds exclusively on reptiles; while the honey-guide bird has the faculty of discovering the stores of the wild bees, and is used by the native tribes for that purpose. Snakes are numerous, but not formidable. The boa constrictor, of a large size, has been killed near Natal, and also a new species of alligator. Fish are extremely abundant and of numerous species; and during winter, whales, porpoises, and sharks, enter the bays, while seals and penguins frequent various parts of the coast.

Ethnography.—Of the 285,000 inhabitants of Cape Colony, nearly a half are Europeans, the remainder being Hottentots, Kaffres, and a mixed race that have sprung from the union of the aborigines with the early Dutch settlers. The Hottentots are mostly employed as herdsmen and farm-servants; but the Kaffres are bold and warlike, and show little inclination for labour of any kind.

Cape Colony was settled by the Dutch in 1650, and remained in their possession till the close of the last century. In 1795 it was taken possession of by a British armament, but restored to the Dutch in 1802. In 1806 it was again taken by the British, since which time it has remained in their possession. During the last fifty years its resources have been greatly developed, and its area correspondingly enlarged. The chief drawback to the prosperity of the colony is the numerous wars in which the settlers have engaged with the Kaffre tribes on the eastern and northern frontiers, who make periodic incursions into the British territory, plundering the cattle, and otherwise disturbing the colonists. A prolonged warfare with the Kaffres was terminated in 1847, which cost Britain about two millions of money, in compensation for which she took possession of the country now known as British Kafraria The descendants of the early Dutch settlers, who now form the minority of the white population, are commonly called *boers*. They have lost much of their ancestral industry and cleanliness, are illiterate, prejudiced, and not always well affected towards the British Government; but they are affectionate in their family relations, and strict in religious observances: rearing of cattle and sheep, and the cultivation of corn and of the vine, are the chief pursuits of the Dutch colonists, the British being chiefly engaged in commerce and in official situations. Emigration from the mother country does not proceed very rapidly, and there is a great demand for labour, especially in the eastern half of the settlement. In 1855 the colony contained 3,500,000 sheep, 1,250,000 goats, and 450,000 cattle. The commerce is considerable, and rapidly increasing. In 1855, the exports were valued at £1,061,068, and the imports at £1,175,489. The principal exports were wool, wine, aloes, copper ore, hides, and skins. A comprehensive system of education, embracing primary and classical schools, was instituted by the Government in 1839 The English language alone is used in the courts of law, but Dutch is also taught in Government schools. The majority of the colonists are Protestants, belonging either to the English Church or to the Dutch Reformed, but Wesleyan Dissenters are also numerous. Numerous missionary stations are maintained in the colony and adjoining territories, and many of the coloured people have been converted to Christianity. The government is vested in a legislative council, consisting of five official members, including the governor, who is appointed by the Crown, and five unofficial members, inhabitants of the colony, who are nominated by the governor.

EAST AFRICA.

Under this designation are comprehended all the countries on the eastern coast of the continent lying between the British colony of Natal and the Gulf of Aden.

Boundaries.—It is bounded on the S. by Kafraria and Natal; on the E. by the Indian Ocean; on the N. by the Gulf of Aden and Abyssinia; and on the W. by the country of the Bechuanas and the unexplored territories of Central Africa. It thus extends from lat. 28° S. to lat. 12° N., embracing a coast-line of upwards of 3500 miles, with a breadth varying from 100 miles in the S. to 600 miles in the N.

Area and Population.—These, in the present extremely imperfect state of our knowledge, cannot be given with any approach to accuracy; but multiplying the length by the average breadth, we have an area of upwards of a million square miles; while the total population may be roughly estimated at 10,000,000.

Surface, &c.—The eastern coast of Africa strikingly corresponds with the western, and indeed the entire eastern half of the continent bears a marked resemblance to the western. On both sides the traveller meets with the same maritime plain of rank and exuberant vegetation, cut by streams disemboguing into the ocean; the same expanse of stony ridges and uplands, running parallel with the coasts, and curiously resembling, both in direction and position, the Eastern and Western Ghauts of the Deccan; still farther inland occurs the same central depression interspersed with rivers and lakes; the same climate; the same diseases, which have the same effect on the European constitution; the same alternation of damp, cold, and depressing heat; the same prevalence of malarious and dysenteric diseases; the same sensation of invincible languor and oppression. Moreover, the fauna, many of them peculiar to Africa, are identical—lions and leopards, elephants and hippopotami, zebras and buffaloes, giraffes, antelopes, and crocodiles. The ethnographic characteristics are equally analogous—the same cruel despotisms, eternal feuds, and bloody rites; the same exports and imports—the one consisting of slaves and ivory, and the other of piece goods and wires, cowries and beads; the same sort of dress—unbleached cotton, skins, or grass kilts; and the same diet—goats' flesh, poultry, river-fish, holcus, manioc, and pulse.

Political and **Geographical Divisions.**—In the extreme south, and contiguous to the colony of Natal, is the native state of Amazula, or the country of the Zulus, an inoffensive Kaffre nation. Next to this are the settlements of the Portuguese, whose authority is now confined to the maritime parts of Sofala and Mozambique, where they lay claim to an area of 59,600 square miles, and a population of 300,000. The greater part of the seaboard N. of the Portuguese dominions is tributary to the Sultan of Muscat, whose capital, Shanganny, is situated in the populous island of Zanzibar. Still farther N. are Ajan and the Somauli country, extending to the Gulf of Aden. The interior—till recently a *terra incognita*—has been traversed within the last five years and admirably described by Livingstone in the S., and by Captains Burton and Speke in the region lying immediately S. of the equator, between the coast of Zanguebar and the 30th meridian. Reserving our sketch of Livingstone's researches in the great basin of the Zambezé till we come to treat of South-Central Africa, we shall here describe, first, the political and geographical divisions of the maritime districts of Eastern Africa, and afterwards give a brief account of the principal discoveries of Burton and Speke in the interior.

AMAZULA.—Lotete n. (Maputa), Lorenzo Marquez (Delagoa Bay).

SOFALA.—Sofala 3, Inhumbane (Indian Ocean), Laubo, Sena, Tete 4 (Zambezé).

MOZAMBIQUE.—Mozambique 6 (Channel of Mozambique), Quillimané (N. arm of Zambezé).

ZANGUEBAR.—Shanganny 10 (Island Zanzibar), Quiloa, Mombas, Melinda, Lamoo, Patta, Brava 5, Magadoxo 4 (Indian Ocean), Galwen 9 (Haines), Jubb (Juba).

AJAN and SOMAULI.—Berbera (Gulf of Aden), Bad (E. coast).

GALLA COUNTRY.—Hurrur 1 (Webbe), Zeyla 1 (Gulf of Aden).

COUNTRIES IN THE INTERIOR.—Fuga 3 (Pangani), Zangomero (Kingani), Ugogo (Mandama, *affl.* Rufiji), Kazé, capital of Unyanyembi (lat. 5° S., lon. 33° E.), Ujiji (E. coast of L. Tanganyika), Muanza (S. coast of L. Nyanza).

Descriptive Notes.—*Sofala*, capital of a Portuguese government of same name, is supposed by some to be the Ophir of King Solomon—it being the port of Manica, the best gold country in Eastern Africa. It consists chiefly of mud huts, and is protected by a fort. *Inhumbane*, the healthiest of the Portuguese stations in Eastern Africa; it exports ivory and bees'-wax. *Sena* or *Senna*, midway between Teté and Quillimané, was the former capital of the Portuguese dominions in Eastern Africa, but is now in a ruinous condition. It is a slave-mart, and very unhealthy: near it is the mountain Morumbala, from 3000 to 4000 feet high. *Teté* or *Tetté*, capital of a Portuguese government, now much declined from its former prosperity, contains a fort with a few guns. Dr Livingstone considers it very healthy. Gold dust in small quantities is found in the vicinity, together with rich seams of coal and some ironstone. *Mozambique*, a fortified maritime city, and the capital of the Portuguese possessions in Eastern Africa, is situated on an island near the coast. It exports ivory, gold dust, and slaves brought down from the regions of the Upper Zambezé. *Quillimané*, capital of a Portuguese government, was visited by Dr Livingstone in 1856, who describes it as a mere village, extremely unhealthy, being built on a mud-bank and surrounded by extensive swamps and rice-grounds. It contains a fort, and has trade in gold, ivory, and especially in slaves; coal of good quality is plentiful. *Shanganny* or *Zanzibar*, capital of the Imam of Muscat's possessions on the E. coast of Africa, is situated in the populous island of Zanzibar. Its population greatly varies at different seasons of the year. It contains a wooden fort, and carries on a considerable trade with Arabia and the ports in the Red Sea, exporting ivory, sharks' fins, sandal-wood, amber, shells, and cocoa-nuts. It is very unhealthy for Europeans, the annual fall of rain being about 100 inches. *Quiloa* or *Keelwa*, on an island off the coast, is the principal town of a province of same name under the rule of the Sultan of Muscat. Once an important town, it is now a mere village. *Mombas* and *Melinda*, small towns on islands near the shore, were visited by Vasco de Gama in 1497. The latter has been totally destroyed by the Gallas. *Magadoxo*, capital of a state which is subject to the Sultan of Muscat, is the chief commercial entrepôt between Cape Guardafui and the river Juba. *Berbera*, a sea-port station in the Somauli country, has a great annual fair frequented by merchants from Arabia, India, and other parts of Asia. *Hurrur*, the principal place of the Galla country, exports coffee in great quantity. *Zeyla*, the port of Hurrur, on the Gulf of Aden.

COUNTRIES IN THE INTERIOR VISITED BY BURTON AND SPEKE.—On the 6th of February 1857, Captains Burton and Speke set out from Pangani, a populous village at the mouth of a river of the same name, known also as the Rufu, which discharges its waters into the Indian Ocean, opposite the northern end of the island Zanzibar, in lat. 5½° S. On the 15th they arrived at *Fuga*, the principal capital of Usumbara, 37 miles N.W. of Pangani. It is an unwalled town of about 3000 inhabitants, and being 4500 feet above the sea-level, it enjoys a cool, healthy climate. The houses consist of circular frameworks of concentric wattle rings, covered externally with plantain-leaves, and plastered inside with fine mud. The people are industrious; the husband and children labour in the fields and tend the cattle, while the women provide wood and water, pound the corn in a mortar, bake the bread, and take care of the young. Both sexes, however, are described as dirty, diseased, and ill fed. The Sultan, who is named Kimwere, rules, like African kings generally, by the sale of his subjects. He is a thorough despot, and sells without remorse, man and woman, gentle and simple, by families and by villages. He has a body-guard of 400 musketeers; his person is sacred, and even a runaway slave is pardoned if successful in touching his majesty. Having finished this experimental journey, our travellers returned to Pangani, a place of considerable commerce; for besides Zanzibar rafters which are cut in the river, holcus, maize, and ghee, it exports annually to Zanzibar about 35,000 lb. of ivory, the finest and largest in the world; 1750 lb. of black rhinoceros horn, and 160 lb. of hippopotamus teeth. On the 26th June 1857, and after the rainy season had terminated, they left Zanzibar on their great journey into the interior. Their party consisted of twelve Beloochees, furnished by the Sultan of Muscat, some negroes who had been slaves, and asses for the transport of goods and for riding. Reaching the mainland at *Bagamoyo* (lat. 6°), at the mouth of the river Kingani, they proceeded along the coast to *Kaole*, 10 miles farther S., and thence westward into the interior. Passing over the low hilly country called M'rima, they entered the coast range of mountains, here called the Rubeho chain, which rises to a maximun altitude of 5646 feet, with a width of about 90 miles, and is composed of sandstone and crystalline rocks. Crossing this range through the Gomo Pass, 2200 feet high, and 120 miles from the coast, they began their descent to the great interior plateau, which is at a much lower level. Travelling over some poor lands, they reached a rich country in which knolls or bosses of granite and basalt rise up like rocks in an ocean. This country is exclusively peopled by negroes, none of whom are Mohammedans, like the Somaulis and trading Arabs of the coast; but, like the negroes described by Livingstone, they have no special religion, trusting solely to good and evil spirits. Such of them as have Sultans are on the whole peaceable—firearms being rare among them. Their country produces cotton, tobacco, maize, sweet potatoes, a great variety of pulses, manioc, yams, plantains, and melons. They have made considerable advances in civilisation, manufacture iron, produce cotton fabrics, have abundance of cows and goats, and live in comparative comfort. The climate, however, is very prejudicial to Europeans: at *Zungomero*, in Khutu, lat. 5° S., and about 200 miles from the coast, Captain Burton was seized with an intermitent fever, which prostrated him for 20 days, and almost every man belonging to his party came by turns asking medicine; but at *Ugogo*, some distance farther to the W., where the elevation is greater, the climate is reported to be clear and healthy. From Kazé, in Unyanyembé (E. lon. 32° 47′), a spot where the Arab traders have established a sort of mart, and where articles from the coast are bartered for ivory and slaves, the travellers moved westerly until they reached the long inland mass of water, trending S. to N., which has been styled Uniamesi and Ujiji, but the real name of which is Tanganyika (see p. 532). It was crossed by Speke in the centre, and navigated conjointly with Burton to near its northern end, where it is surrounded by mountains ranging from 6000 to 7000 feet in altitude. Though possessing no outlet, its waters are perfectly fresh and agreeable: it abounds in delicious fish, while its banks are grazed by red oxen with stupendously long horns. Oxen indeed are common over nearly all the region examined, for the *tsetse* fly, the scourge of the more southern African countries, is here wholly unknown. The western shores of the lake are wild and beautiful, affording many convenient harbours, and requiring but a little art to make it quite a fairy abode. Strange to say, there are no inhabitants on that side of the lake, but game, hippopotami, buffaloes, elephants, antelopes, and crocodiles, are numerous. Returning to their chief central station in Unyanyembé, 19th June 1858, Speke left his invalid companion, in order to reach the great lake Victoria Nyanza, the position of which had been pointed out to him by the Arabs, who asserted that it was much longer and larger than Tanganyika, from which it lies in a north-easterly direction, and at a distance of 240 miles. In his journey across the intervening mountains Captain Speke, accompanied by his faithful Beloochees, passed through the populous district in which the chief iron-works of the country are carried on—the native blacksmiths smelting the iron with charcoal. Lake Nyanza is situated under the equator, its southern extremity being in lat. 2° 50′ S. It is upwards of 300 miles long, about 90 miles broad in its widest part, and at an elevation of 3740 feet above the ocean level. It is studded with numerous islands, which strongly reminded Captain Speke of the Grecian Archipelago, and which were precisely similar in form to the tops of the hills that studded the plains intervening between this lake and Tanganyika. The waters are sweet and good, and the people on its banks drink no other. The lake receives a multitude of rivers from all sides save its northern extremity, where, according to the testimony of the natives, it discharges its surplus waters by the river Kivira, which flows northwards, and which is confidently believed by Captain Speke to be the White Nile. If by subsequent travel this gallant explorer shall demonstrate the accuracy of this opinion, to him must be awarded the honour of having solved the greatest geographical problem of ancient or modern times. And not only is the main source of the Nile apparently thus discovered, but we are at the same time supplied with the key that shall unlock the kindred mystery connected with that river—viz., its periodical inundations, on which, for ages, so much fruitless conjecture has been expended. The rainy season in the region immediately S. of Lake Nyanza commences on the 15th November, and ends on the 15th May, during which period of six months the rain falls in an almost continuous downpour, overflooding all the rivers which, over an extensive area of country, send their waters into its basin. The Nile begins to rise in Egypt about the summer solstice, and attains its greatest height about the autumnal equinox. Making due allowance for the time required to fill so enormous a reservoir as Lake Nyanza, and for the great length of the journey which its waters must traverse before they arrive in Egypt, there appears no real discrepancy between the respective seasons of the two phenomena—the rainy season under the equator, and the rise of the Nile in Lower Egypt.

Capes, Islands, Mountains, Rivers, Lakes.—See under "Africa," pp. 528-531.

Climate.—South of the Tropic of Capricorn, or in the region extending from Natal to Cape Corrientes, the climate approaches closely to that of Cape Colony; everywhere else it is tropical, and is characterised by extreme heat, periodical rains, and great insalubrity. The winds which bring the heaviest rains, and which are named *monsoons*, come from the Indian Ocean, and prevail from April to October (see p. 28).

Minerals.—The principal minerals hitherto known to exist in this region are gold dust, which is found in small quantities in Mozambique and Sofala; copper, rich seams of coal, and good ironstone in Mozambique; and amber in Zanguebar.

Botany.—The flora of that portion of the mainland which lies S. of the Tropic of Capricorn belongs to Schouw's "Region of Stapeliæ and Mesembryanthema," already described under Cape Colony; while the entire intertropical portion, together with the island Madagascar, is included within the 14th region of that naturalist (also named Adanson's Region), for the characteristic vegetation of which we refer the reader to "Africa," art 16.

Zoology.—See under "Surface," and at p. 534.

Ethnography.—The natives of the eastern coasts of Africa, and inwards as far as the great lakes, are regarded by Burton and Speke as belonging to the great South African family, and as occupying a mean position between the Syro-Arabian races of the Barbary States and the aborigines of Central Negroland.

They are closely allied by blood, language, and other analogies, to the natives residing in the basin of the Zambezé; and extend from Cape Delgado to the equator, where they come in contact with the Gallas and Somauli. "They are all," says Captain Burton, "similar in appearance and cognate in idiom, although the difference of vocabulary renders neighbouring tribes unintelligible to each other." The group of dialects spoken by them has been termed the Zangian family of languages, which radically differs from the Syro-Arabian on the one hand, and the Nigro-Hamitic on the other (see p 535). Interiorly, they extend, according to Burton, into the central regions of Intertropical Africa. The Gallas and Somauli belong to Krapf's Nilotic class. Arabs are numerous in the dominions of the Imam of Muscat, while a few Europeans are found in the Portuguese territories. For the Ethnography of Madagascar, see at p. 530.

SOUTH-CENTRAL AFRICA.

LIVINGSTONE'S DISCOVERIES.

Dr Livingstone started in the beginning of June 1852, on his last journey, from Cape Town—a journey which extended from the southern extremity of the continent to St Paul de Loando, the capital of Angola, on the west coast, and thence across South-Central Africa, in an oblique direction, to Quillimané, on the Channel of Mozambique. He was accompanied by two Christian Bechuanas from Kuruman, and two Bakwain men. This small party was conveyed in a lumbering Cape waggon drawn by ten oxen. His route lay in a north-easterly direction, nearly parallel with a line bisecting the triangular area of Cape Colony: he crossed the Orange River in long. 24°, near the point at which it receives the Brak on its left. If we suppose this triangular tract of country to be divided into three longitudinal zones, we shall find each of them presenting distinct peculiarities of climate, physical appearance, and population; and if the trisecting lines be produced, these characteristics will be found to be better marked beyond the limits of the Colony than even within it. The eastern zone is often furnished with mountains, well wooded with evergreen succulent trees, on which neither fire nor droughts have the smallest effect, and its seaboard gorges are clad with gigantic timber. It is also comparatively well watered with streams and flowing rivers ; the annual supply of rain is considerable, and the inhabitants—Kaffres or Zulus—are tall, muscular, and well made, shrewd, energetic, and brave ; in short, fully meriting the character given them of being "magnificent savages." Their splendid physical development and form of skull show that, but for their black skin and woolly hair, they would take rank among the foremost Europeans. The next division—that which embraces the centre of the continent—can scarcely be called hilly, for what hills there are are very low. It consists, for the most part, of extensive slightly undulating plains, with no lofty mountains, only a few springs, and still fewer flowing streams ; rain is far from abundant, and droughts occur every few years. Without artificial irrigation no European grain can be raised, and the inhabitants, who are named Bechuanas, though evidently of the same stock originally with the Kaffres, and closely resembling them in being an agricultural as well as a pastoral people, are a comparatively timid race, and inferior to the Kaffres in physical development. The western division is still more level than the middle one, being rugged only near the coast. It includes the great plain called the Kalahari Desert, which is remarkable for little water and very considerable vegetation. The reason probably why so little rain falls in this extensive plain is, that the prevailing winds of most of the interior are easterly, with a little southing. The moisture taken up by the atmosphere from the Indian Ocean is deposited on the eastern hilly slope long before the wind which had transported them arrives at the desert. The first and last of these zones having been already described under "Eastern Africa" and the "Country of the Hottentots," we shall confine ourselves in the following paragraphs to the great missionary's discoveries in the country of the Bechuanas. The term "Bechuana" is the most generic and comprehensive of all the ethnographic distinctions of Southern Africa, as it includes nearly all the tribes that live between the Orange River on the S. and the Zambezé on the N. Recently, indeed, some of the tribes comprised under this designation have pushed their conquests considerably farther north—*e. g.*, the Makololo, who, under their able chief, Sebituane, have extended their dominion as far as lat. 14° S. In general, however, the Zambezé forms the northern boundary of the Bechuanas. The numerous tribes or nations of which they consist are mainly comprised under the leading divisions of Bakalahari, Makololo, Matebele or Kaffres, Basutos, and Bakoni, but we can here only state the results of the great missionary's intercourse with the two divisions first named.

The BAKALAHARI are regarded as the oldest existing division of the Bechuana family of nations. Living immediately north of the Orange River, and confined for the most part to the sterile desert of Kalahari, they form, in all likelihood, the remnants of the first extensive emigration southwards of that family. In point of antiquity, therefore, they would appear to rank next to the degraded Hottentots, who partly live amongst them, and partly lie W. of them, and who are regarded as the aborigines of the country. Formerly they possessed large flocks of horned cattle, of which they were deprived by a fresh migration of their own nation from the north, and driven into the desert, where they live by compulsion and not by choice. They still retain in undying vigour that love of agriculture and domestic animals so characteristic of the Bechuana race. Though confined to the same arid regions with the Bushmen, and subjected to the same climatic influences, they greatly differ from them in language, race, habits, and appearance—a fact which very clearly shows that mere external agencies cannot account for difference of race. They hoe their gardens annually, though the only return they can hope for is a supply of melons and pumpkins, and carefully rear small herds of goats, though they have usually to supply water for them in spoonfuls, or with a bit of ostrich egg-shell, out of small wells dug in the sand. They are a timid race, and in bodily development often resemble the aborigines of Australia. They have thin legs and arms, and large protruding abdomens, caused by the coarse, indigestible food they eat. They are greatly tyrannised over by the other Bechuana tribes living near them, and their hard-earned property, consisting chiefly of the skins of animals, is carried off with impunity. Such is their dread of visits from their more warlike neighbours, that they choose their residences far from water, and hide their supplies of it by filling the water-pits with sand, and making a fire over the spot, so that a stranger can form no conception of the place where the precious fluid is stowed away. The tract of country extending from the Orange River to Lake Ngami, and from 24° E. long. to near the west coast, has been called a "desert," simply because it contains no running water, and very little in wells. It is by no means destitute of vegetation, for it is covered with grass and a great variety of creeping plants, besides which there are large patches of bushes and even trees. It is remarkably flat, but intersected in different parts by the beds of ancient rivers; and prodigious flocks of certain antelopes, which require little or no water, roam over the trackless plains. The Bakalahari and Bushmen prey on the game, and on the countless rodentia and small species of the feline race which subsist on these. The quantity of grass that grows in this remarkable region is astonishing. It usually rises in tufts, with bare spaces between, or the intervals are occupied by creeping plants. The number of these that have tuberous roots is very great, and their structure is such as to supply nutriment and moisture, when, during the long droughts, they can be obtained nowhere else. The traveller sees a small plant with linear leaves, with a stalk not thicker than a crow's quill; on digging down a foot or eighteen inches beneath, he comes to a tuber, often as large as the head of a young child; and, when the rind is removed, he finds it to be a mass of cellular tissue, filled with fluid, much like that in a young turnip; while, owing to the depth at which it is found, it is generally deliciously cool and refreshing. The fauna of the Kalahari consists for the most part of small carnivora of the feline tribe, as the jackal, ocelot, lynx, wild cat, and spotted cat, and occasionally lions, leopards, panthers, and hyenas; the ruminants include the buffalo, eland, gnu, blesbuck, bluebuck, steinbuck, and springbuck. Birds are comparatively few, but include the ostrich and swift; while serpents, which are sometimes of an enormous size, are very numerous. The principal subdivisions of the Bakalahari are the Bakwains or Baquena, who are the most commercial tribe belonging to this family, the Barolong, Bahurutse, Bangwaketse, Bakáa, Bamangwato, Bakurutse, Batanana, Bamatlaro, and Batlapi. Properly speaking, they have no towns, but there are numerous assemblages of huts, ranging in an orderly manner around the central one which forms the residence of the chief, and they are often moved from place to place as their exigencies require. Many of the people have been converted to Christianity, the principal mission stations being *Kuruman* or *Lattakoo*, 630 miles N.E. of Cape Town, with a fine, ever-flowing fountain; and *Kolobeng*, about 230 miles farther N, with a charming climate. Dr Livingstone resided for a time at each of these places, and has imparted to them a classical interest.

Makololo.—These form the most northern division of the great Bechuana family, the Bakalahari being the most southern. They people the country lying between Lake Ngami and the Zambezé, and recently have pushed their conquests beyond that river, to latitude 14° S.; but this portion of their territory is principally occupied by the numerous Negro or black tribes whom they have subdued, and who are known by the general designation of Makalaka. This conquest took place under Sebituane, the father of their present chief, who is named Sekeletu. His capital, called *Linyanti*, a town of about 7000 inhabitants, stands on the north or left bank of the Chobe, one of the chief affluents of the Zambezé (latitude 18° 17′ S., longitude 23° 50′ E.) The other principal towns of the Makololo are *Shesheke*, *Shekhosi*, *Nariel* or *Naliele*, *Shinte* or *Kabompo*, *Katema*, and *Katende*, all on the north bank of the Zambezé, and above the Victoria Falls. These towns are not very populous, for, being all situated on artificial mounds in the valley of the river, to avoid being swept away by its inundations during the rainy season, the sites on which they stand are of necessity very limited. This valley, the upper portion of which is called the Valley of the Barotse, is extremely fertile, and capable of producing two crops in the year. The Makololo cultivate a large extent of land around their villages, and raise great quantities of maize, millet, and native corn (*holcus sorghum*), besides yams, sugar-cane, Egyptian arum, sweet potatoes, two kinds of manioc or cassave, beans, pumpkins, melons, and cucumbers. Fruit-trees abound, but not having received any care, the fruit is usually acid. On the banks of the Chobe grow some species of the Ficus Indica, acacias of a light-green colour, splendid motsintsella, and the ever-green cypress-shaped motsuri. At the confluence of the Leeba and Leeambye is found a great variety of flowers of great beauty and of curious forms, and in general quite unlike those to be met with south of Lake Ngami. The Papilionaceous family of plants is especially numerous. The grass is so luxuriant, Dr Livingstone says, that in many places it quite concealed his oxen and waggon. Trees of many new species occur. The baobab, the most gigantic form in the vegetable kingdom, together with the banyan, the wild date, the wild vine, and Palmyra, give character to the landscape; while, skirting the margin of the Chobe and many other rivers, are seen forests of tall reeds, and a serrated grass, the edges of which cut like a razor. This region abounds with wild animals, many of them unknown to science. Among the more common species may be mentioned the lion, elephant, hippopotamus, rhinoceros, wild hog, zebra, giraffe, gnu, tsessebe, leche, buffalo, koodoo, nakong, and antelope. Birds, which are extremely numerous, comprise the turtle-dove, ibis, fish-hawk, plover, white-necked raven, parrots, weavers, francolins, guinea-fowls, iguano, speckled king-fisher, bee-eater, swallow, sand-marten; white pelicans, in flocks of three hundred at a time, following each other in long-extending line; clouds of a black shell-eating bird, called linongolo; snipes, curlews, and herons without number; the stately flamingo, the Numidian crane, gulls, waders, black geese, ducks; kala, ardelta, crow, marabou, and the strange-looking scissor-bill, with snow-white breast, jet-black coat, and red beak, sitting by day on the sandbanks, the very picture of comfort and repose. Crocodiles and alligators frequent the rivers, with water-turtles of enormous size. North of the Bakwain country are found occasionally huge land-tortoises, which, with their unlaid eggs, make a very agreeable dish. The serpents attain here an enormous size, and are often highly venomous; while others are harmless and even edible, as the huge python and tari, which not unfrequently are from 15 to 20 feet long. Fish of many species abound in the larger rivers, and during the rainy season are seen descending in immense shoals, especially in the Zambezé and the Chobe. The climate being tropical and the country well watered, all nature teems with life; and though the lower grounds are in general unhealthy to Europeans, there are numerous spots in which the white man can reside with impunity. On the whole, the discovery of this immense and fertile tract of country forms the most important contribution to geographical science that has been made in modern times. The great Bechuana family of nations, isolated for ages from the civilised world, and constantly at war with one another, destitute alike of the blessings of Christianity and the use of letters, stand far higher in the scale of humanity than Europeans had previously any conception of. They have made considerable progress in some of the more necessary useful arts, including that of agriculture; they are favourably disposed towards Englishmen, with whom they are ready to engage in commerce; and, though unusually destitute of the religious feeling, they have evinced the deepest attachment and respect towards the first herald of the Cross that ever visited their long-benighted land.

LATER DISCOVERIES.—In the end of 1859, Dr Livingstone, accompanied by Mr C. Livingstone, Dr Kirk, and Mr Rae, traced the river Shiré from its confluence with the Zambezé, a point midway between Sena and the apex of the delta, up to its point of departure from Lake Niyanyizi-Nyassa, signifying, "Lake of the Stars." The southern extremity of the lake is in lat. 14° 25′ S., but its longitude, northern limit, length, and area, remain undetermined. Its elevation above the sea closely approximates to that of Lake Tanganyika, the southern end of which is in lat. 7° 30′ S. (see p. 582); but as yet Dr Livingstone cannot positively say whether any, or what, connection subsists between them. Another large body of fresh water, named Lake Shirwa, 90 miles long by 40 broad, is situated a few miles to the east of Lake Niyanyizi, being separated from it by a narrow isthmus, over which all the trade from the interior to the coast must of necessity cross. It is at this point that Dr Livingstone thinks the exportation of slaves may most easily be checked. At the point of egress from Lake Niyanyizi, the Shiré is a magnificent river, varying from 80 to 150 yards wide, 12 feet deep, and running at the rate of 2½ knots an hour. Except for about 33 miles of rapids, it is navigable throughout its entire course, while the adjacent country enjoys a highly salubrious climate, with a soil capable of producing anything that can grow in tropical regions. The natives are intelligent, and actively engaged in agriculture, especially cotton, which the explorers declare is of foreign origin. The worst feature about them is their frequent drunkenness, from the over-use of native beer and Indian hemp. Until slavery, however, is abolished, the resources of the country can be of no use to European nations—all legitimate commerce being effectually paralysed by this master evil of the African continent.

NORTH AMERICA.

1. **Boundaries.**—Including Greenland and Central America, this large division of the globe is bounded on the N. by the Arctic Ocean; on the W. and S. by the Pacific; and on the E. by the Isthmus of Panama, the Caribbean Sea, the Gulf of Mexico, and the Atlantic Ocean. It extends from the 7th to about the 82d degree of N. lat., and from the 20th to the 168th degree of W. lon., thus embracing 75° of lat. and 148° of lon.

The mainland rarely extends farther north than the 70th parallel, being separated from the great American Archipelago by Hudson Strait, Fox Channel, Gulf of Boothia, King William Sound, Dease Strait, and Coronation Gulf; nor farther east than Cape Charles in Labrador, in lon. 55° 30′ W. Great Salt Lake, near the centre of this area (lat. 41°, lon. 112° 35′), is on the same parallel of latitude with New York, Madrid, Rome, Constantinople, and Pekin; and on the same meridian as Great Slave Lake, Cape San Lucas, the southern extremity of Old California, and Easter Island in Polynesia.

2. **Form, Dimensions, &c.**—The continental part is rudely triangular, with the base directed towards the north.

The extreme length, from the Isthmus of Panama to Cape Lisburn, in Russian America, is about 5600 miles; the extreme breadth, from Cape Canso, in Nova Scotia, to the mouth of the river Oregon, 3120 miles. Cape Barrow, in Russian America, lat. 71° 23′, is the most northern point of the continent; Cape Prince of Wales, in Behring Strait, lon. 168° W., the most western; Mariato Point, in the Bay of Panama, lat 7° 15′, the most southern; and Cape Charles, in Labrador, lon. 55° 30′ W., the most eastern. Including the larger indentations, the coast-line is estimated at about 24,000 miles, or 1 mile of seabord for every 365 miles of surface; while Europe has 1 for every 220 miles. The principal indentations are the Hudson Sea, Gulf of St Lawrence, Bay of Fundy, and Gulf of Mexico, all on the east side. The only deep inlet on the western side is the Gulf of California. The northern seabord is practically valueless, owing to the constant prevalence of ice.

3. **Area.**—The area is still very uncertain, but, including Greenland, the West Indies, and the other islands, it is usually estimated at 8,646,277 square miles, or 2¼ times the size of Europe, and 70 times that of the British Isles.

4. **Population.**—The population of North America, according to the most recent census of the various states composing it, amounts to 40,328,884, which is only a little more than a seventh part of the population of Europe, and gives less than five persons to each square mile.

5. **Political Divisions.**—The total number of separate and independent states is about 75; but if we regard the United States, the Mexican Confederation, and the West Indies, as one state each, the number will be reduced to seven. The following table contains the name, position, area, population, capital, and other particulars of the different states:—

TABLE OF NORTH AMERICAN STATES.

Name and Position.	Area in Eng. Square Miles.	Population at last Census.	Capital.	River, &c., on which the Capital is situated.	Population of Capital.
Russian America, in the N.W. of the continent,	394,000	66,000	New Archangel.	Sitka Island.	1,000
British North America, E. of Russian America,	3,488,620	3,437,785	Ottawa, &c.	Ottawa.	75,000
Danish America, N.E. of British North America,	380,000	9,400	Julianshaab.	S.W. coast.	1,000
United States, S. of British North America,	3,260,000	23,191,876	Washington.	Potomac.	40,000
Mexican Confederation, S.W. of United States,	856,000	7,845,205	Mexico.	Lake Tezcuco.	220,000
Central America, S.E. of Mexican Confederation, including—					
Guatemala, in the N.W. of Central America,	43,380	970,450	New Guatemala.	Montagu.	60,000
San Salvador, S.E. of Guatemala,	9,594	394,000	Cojutepeque.	Lake Ilopango.	15,000
Honduras, N.E. of San Salvador,	39,600	350,000	Comayagua.	Humuya.	18,000
Nicaragua, S.E. of Honduras,	49,500	260,000	Leon.	Lake Leon.	25,000
Costa Rica, S.E. of Nicaragua,	13,590	215,000	San José.	Rio Grande.	30,000
Balize, or British Honduras, N.E. of Guatemala,	19,200	11,066	Balize.	Balize	5,000
West Indies, E. of Central America,	92,793	3,578,102	Havannah, &c.	N.W. coast Cuba.	130,000

6. **Surface.**—The surface consists of three very dissimilar regions—an eastern, a central, and a western. The first extends from the Atlantic for about a thousand miles inland, and from the Arctic Ocean to the Gulf of Mexico. With the exception of the Appalachian range, near its eastern margin, this vast region, embracing an area of perhaps 2,500,000 square miles, is one immense level plain ranging from 200 to 800 feet in height. It embraces the basin of the St Lawrence, containing the largest fresh-water lakes in the world; that of the Mississippi proper, containing the finest soil in the New World; and a large portion of the circular basin of the Hudson Sea.

The Second or Central Region extends from the great lakes to the eastern slope of the Rocky Mountains, and from the Arctic Ocean to the 35th parallel of latitude. Though greatly more elevated than the eastern region, it may still be regarded as an integral portion of the Great Central Plain of North America. In its eastern side the elevation does not usually exceed 1000 feet, Lake Superior, which touches its north-eastern angle, being only 857 feet above the level of the Atlantic; but in its western half, which skirts the Rocky Mountains from the 35th parallel to the Northern Ocean, it forms a high barren steppe, with an average elevation of 3000 feet. The principal river-basins in this region are those of the Mackenzie, inclining northwards; the Churchill and Saskatchewan, both of which are studded with large lakes, and inclined to the Hudson Sea; and the upper basins of the Missouri and Arkansas, inclined to the Gulf of Mexico. The Western Region, extending from the Central Region to the Pacific Ocean, consists almost exclusively of elevated plateaux of from 3000 to 5000 feet in height, supporting gigantic mountain-chains that extend, without interruption, from the Arctic Ocean to the vicinity of Lake Nicaragua in Central America. The only river-basins of importance in this region are those of the Colville, inclining northward; the Fraser, Sacramento, and Columbia, inclining westward; the Colorado, southward, to the Gulf of California; and the inland or continental basin of Utah, characterised by great elevation, deficiency of moisture, dry scorching winds, and numerous lakes whose waters are highly charged with salt.

7. **Peninsulas and Isthmuses.**—The principal peninsulas are, Labrador and Nova Scotia on the E. side of British America; Florida, between the Atlantic and Gulf of Mexico; Yucatan, between Gulf of Mexico and the Caribbean Sea; Lower California, separating the Pacific Ocean from the Gulf of California; Aliaska, separating the Pacific Ocean from the Sea of Kamtchatka. Isthmus of Chignecto, 8 miles wide, connecting Nova Scotia with the continent; Isthmus of Tehuantepec, 130 miles wide, separating the Gulf of Mexico from the Pacific Ocean; Isthmus of Panama, 30 miles wide, connecting Central with South America. The remaining isthmuses have no distinctive names.

8. **Capes.**—Farewell, the S. extremity of Greenland; Walsingham, Chudleigh, and Charles, the N.W., N.E., and S.E. extremities of Labrador; Race, the S.E. angle of Newfoundland; Sable, the S.W. extremity of Nova Scotia; Ann and Cod guard the entrance of Massachusetts Bay; Hatteras, E. of North Carolina; Sable, the S. extremity of Florida; Catoche, N.E. of Yucatan; Gracios a Dios, E. of Honduras; Mala, on the W. side of Bay of Panama; Blanco, W. of Costa Rica; Corrientes, W. of Mexico; St Lucas, the S. extremity of Lower California; Concepcion, Mendocino, Blanco, and Flattery, W. of the United States; Newenham, Romanzoff, Prince of Wales, and Lisburne, on the W. coast, and Icy Cape and Point Barrow on the N. coast, of Russian America; Cape Bathurst, in Hudson Bay Territory, lon. 127° W.

9. **Islands.**—The islands of North America may be conveniently arranged under three heads, corresponding with the three oceans in which they are respectively situated.

In the Arctic Ocean.—Greenland, N.E. of British America, from which it is separated by the Greenland Sea, Davis Strait, Baffin Bay, South Sound, and Kennedy Channel; the Parry group, including Ellesmere, North Devon, Cornwallis, and Melville Island, W. of Northern Greenland; Banks Land, Boothia, Cockburn, and Cumberland, between the Parry Islands and the mainland. *In the Atlantic.*—Newfoundland, Anticosti, Prince Edward Island, and Cape Breton, S. of Labrador; the Bermudas or Somers Islands, 600 miles E. of South Carolina; the West Indies between Florida and South America, and embracing two minor groups—viz. the Bahamas, S.E. of Florida, and the Antilles, S. of the Bahamas, separating the Atlantic from the Caribbean Sea—principal Cuba, Jamaica, Haiti or San Domingo, Porto Rico, Guadeloupe, and Trinidad. *In the Pacific.*—Vancouver Island and Queen Charlotte Island, W. of British America; Prince of Wales Island, Sitka, Kodiac, and Aleutian Archipelago, S. of Russian America; St Lawrence or Clark Island, in Behring Strait.

10. **Seas, Bays, and Straits.**—Baffin Bay and Davis Strait, between Greenland and the North American Archipelago; Hudson Strait, between Labrador and the Archipelago; Hudson Bay or Sea, W. of Labrador; Fox Channel, Gulf of Boothia, Coronation Gulf, and Prince Albert Sound, between the mainland and the Archipelago; Lancaster Sound, Barrow Strait, and Melville Sound, separating the Parry group from the southern part of the Archipelago; Strait of Belleisle, between Labrador and Newfoundland; Gulf of St Lawrence, between Newfoundland and New Brunswick; Bay of Fundy, between Nova Scotia and New Brunswick; Chesapeake Bay, in Virginia and Maryland; Gulf of Mexico, between Mexico and the United States; Caribbean Sea, between Central America and the West Indies; Bay of Panama, Gulf of Nicoya, and Bay of Fonseca, on the W. coast of Central America; Gulfs of Tehuantepec and California, W. of Mexico; San Francisco Bay and Humboldt Bay, W. of the United States; Strait of Juan de Fuca, between United States and Vancouver Island; Gulf of Georgia and Queen Charlotte Sound, between Vancouver and British Columbia; Cook Inlet and Bristol Bay, S. of Russian America; Behring Strait, between Russian America and Siberia.

11. **Mountains.**—The mountains of North America arrange themselves into two grand systems—an eastern and a western—which are separated from each other by the great central plain already described. These systems are named respectively the Alleghanies or Appalachian Chain, in the eastern States of the North American Union, running nearly parallel to the Atlantic seaboard for a distance of about 2000 miles; and the Western or Pacific System, in the west, running parallel to the coast of the Pacific, and forming the great axis or vertebral column of the continent.

THE ALLEGHANIES OR APPALACHIAN CHAIN, 2000 miles in length by about 150 miles in breadth, extend from Point Gaspé in the Gulf of St Lawrence to the State of Alabama, and divide the waters which flow eastward into the Atlantic, from the two great basins of the Mississippi and the St Lawrence. Average elevation about 4000 feet. The highest summits are:—Mount Washington, in New Hampshire, 6652 feet; Black Mountain, between Tennessee and North Carolina, 6420 feet.

THE WESTERN OR PACIFIC SYSTEM, better known as the ROCKY MOUNTAINS, consists of two, and in some places of three, parallel chains, supported by elevated table-lands, and extending in the direction of the greatest length of the continent, from the Arctic Ocean to Lake Nicaragua in Central America. The two principal ranges with their highest summits are the following:—1. The PACIFIC or OCEANIC RANGE, extending along the western coast. from Russian America to the Peninsula of California, forms the watershed between the Pacific Ocean on the west, and the Colville and Rio Colorado on the east. Its principal members are:

—*The Sea Alps* in the north, extending from lat. 60° in Russian America to the mouth of the Frazer River in British Columbia, of volcanic origin, and forming the highest summits in this continent:—Mount St Elias (lon. 140°), the culminating point of North America, 17,850 feet; Mount Fairweather, 14,783 feet. *The Cascade Range*, from the mouth of the Frazer to that of the Kalamath in the north of California: the principal mountains are volcanic:—Mount St Helens, N. of the Columbia, the culminating point of the United States, 15,750 feet; Mount Hood and Mount Jefferson, S. of the Columbia, 15,500 feet. *The Sierra Nevada and Coast Ranges*, extending from the Kalamath to Cape San Lucas in Lower California, and separated from the eastern range by the basin and estuary of the Rio Colorado:—Mount Tsashti, in the N. of California, 14,400 feet; Mount St John, in the Coast Range, 8000 feet. 2. The ROCKY MOUNTAIN CHAIN forms a waving line along the central and eastern side of the great table-land, from the mouth of the Mackenzie in the Arctic Ocean to near Lake Nicaragua in Central America, and separates the basins of the Colville, Frazer, Columbia, and Rio Colorado on the west, from those of the Mackenzie, Saskatchewan, Missouri, Arkansas, and Rio del Norte on the east. Its principal members are:—*The Northern Range*, extending from the Northern Ocean to the northern frontier of the United States:—Mount Brown, east of British Columbia, and the culminating point of British America, 15,990 feet; Mount Hooker, south of Mount Brown, 15,700 feet. *The Wind River Mountains*, between the territories of Oregon and Nebraska; highest summit, Freemont's Peak, at the sources of the Columbia, Rio Colorado, and Missouri, 13,568 feet. *Sierra Verde and Sierra Madre*, in New Mexico, and extending southward along the centre of the table-land of Mexico to the river Culiacan:—Long's Peak, (lat. 40°), 12,000 feet; Pike's Peak, 10,000 feet; Bighorn, 10,000 feet. *Mountains of Anahuac*, or of southern Mexico, extending from east to west across the table-land, and all volcanic:—Orizaba, an extinct volcano, (lat. 19°), 17,347 feet; Popocatepetl, the culminating point of Mexico, 17,720 feet.

12. **River Basins and Capitals.**—The rivers of North America belong to four great oceanic basins—viz. those inclining to the Atlantic, to the American Mediterranean (the Gulf of Mexico and Caribbean Sea), to the Pacific, and to the Arctic Ocean. Not a few of the larger river-basins enumerated in the following Table contain no capitals, while the area of several others remains undetermined. When the name of the State differs from that of the capital, it is put within parentheses:—

NAME OF RIVER OR ESTUARY.	Length of Basin in Eng. Miles.	Area in Geographical Square Miles.	CAPITALS OF STATES AND PROVINCES.
1. *Basins inclined to the Atlantic.*			
St Lawrence, ...	1400	297,600	Ottawa (Canada), Montpelier (Vermont), Detroit (Michigan): other large cities are, *Quebec*, *Montreal*, *Kingston*, and *Toronto*.
Connecticut, ...	280	8,000	Hartford (Connecticut).
Hudson, ...	210	7,000	Albany (New York).
Delaware, ...	290	8,700	Trenton (New Jersey).
Chesapeake, ...	450	12,000	Annapolis (Maryland), Harrisburg (Pennsylvania), Richmond (Virginia), WASHINGTON (U. States).
2. *Basins inclined to the American Mediterranean.*			
Mississippi, ...	1820	982,400	Baton Rouge (Louisiana), St Paul (Minnesota), Little Rock (Arkansas), Nashville (Tennessee), Indianapolis (Indiana), Frankfort (Kentucky), Columbus (Ohio), Jefferson City (Missouri), Lecompton (Kansas), Springfield (Illinois), Fort Union (Nebraska), Iowa City (Iowa), Madison (Wisconsin).

	Length of Basin in Eng. Miles.	Area in Geographical Square Miles.	CAPITALS OF STATES AND PROVINC
2. *Basins inclined to the American Mediterranean*—(Continued).			
Rio Grande del Norte,	1050	180,000	Santa Fé (New Mexico), Chihuahua.
Santander,..	245	10,000	Victoria (Tamaulipas), San Luis Potosi, Zacatecas.
Tabasco, ..	245	12,000	San Juan Bautista (Tabasco), Ciudad Real (Chiapas).
San Juan,	275	8,000	Leon (Nicaragua).
3. *Basins inclined to the Pacific.*			
Rio Santiago,......		30,000	Guadalaxara, Guanaxuato, Morelia (Michoacan), Queretaro.
Culiacan,..........	280	7,000	Culiacan (Sinaloa), Durango.
Rio Colorado,......	750	170,000	No towns.
Sacramento,.......	350	20,000	Sacramento City (California).
Columbia,....... ..	800	194,000	Salem (Oregon).
Frazer,.....	450	30,000?	NewWestminster(BritishColumbia).
4. *Basins inclined to the Arctic Ocean.*			
Colville, ...	850	100,000?	No towns.
Mackenzie, ...	200	441,600	
Coppermine, ...	300		
Back or Great Fish River, ...	420		
Churchill,	1300	73,600	
Nelson and Saskatchewan, ...	1000	360,000	Fort York (Hudson Bay Territory).
Albany,...........	400	52,800	No towns.

13. **Lakes.**—The principal lakes of North America, in the order of the river-basins in which they occur, are the following :--

St Lawrence Basin.—Lakes Ontario, Erie, Huron, Michigan, and Superior, the largest fresh-water lakes in the world, their united area amounting to 93,880 square miles; Champlain, drained by the Richelieu, and Moosehead, by the Kennebec. *Mississippi*—Lake Stasco, in Minesota, forming the source of the river. *San Juan*—Nicaragua and Leon, in Central America. *Rio Santiago*—Lake Chapala in Mexico. *Mackenzie*—Great Bear Lake, Great Slave Lake, Athabasca, Lesser Slave Lake, Wollaston.* *Churchill*—Indian Lake, Deer Lake, Wollaston. *Saskatchewan*—Winnipeg, Winnipegoos, Manitoba, Lake of the Woods, Rainy Lake. *Albany*—Lake St Joseph, Lake Savan. *Great Continental Basin*—Great Salt Lake and Utah.

14. **Climate.**—In a continent embracing 75 degrees of latitude, and nearly twice as many of longitude, the varieties of climate must be very great. Speaking generally, however, we find that its various portions have a lower average temperature than the corresponding latitudes of the Old World. The immense forests which cover so large a portion of the surface, the general want of cultivation of the soil, and above all, the great width of the continent in high latitudes, are no doubt some of the main causes that lead to this result.

* The waters of Lake Wollaston are connected both with the Churchill and the Mackenzie, a stream issuing from either extremity of the lake, and flowing in opposite directions.

The western side of the continent is greatly warmer than its eastern. For example, in Russian America the island Sitka has a mean annual temperature of 45° Fah., while Nain, in Labrador, in the same latitude, has a mean temperature of only 28°. The difference between the mean summer and mean winter temperatures is still greater ; for while at Sitka and San Francisco it amounts only to 22°, at Nain and Quebec it amounts to 44° and 54°. The hottest portion of the New World lies mainly within this continent, being embraced within the isotheral line of 81° Fah., which encloses the Gulf of Mexico and the Caribbean Sea—that great cauldron of heated waters which originates the Gulf Stream—the southern portion of the United States, the eastern side of Mexico and Central America, and the northern part of New Granada and Venezuela. The coldest region of North America and of the New World is embraced within the isocheimenal line of 26° below zero—a line which, commencing at Cape Bathurst, near the mouth of the Mackenzie, deflects south-eastwards to the head of Chesterfield Inlet, and thence northwards to Lancaster Sound and North Devon. North America is also more humid than the corresponding latitudes of the Old World. It is calculated that 115 inches of rain fall annually in tropical America, while in tropical Asia and Africa the amount does not exceed 77 inches. In the temperate regions of the eastern continent, the annual average is estimated at 34 inches, while it amounts to 39 inches in the corresponding zone of the western. The rainiest region of this continent corresponds with the region of highest temperature above described, in which, as well as in Old California, Southern Mexico, and all Central America, snow never falls.

15. **Geology.**—The geological structure of North America remains to a large extent unexplored, Canada and the United States being the only portions that have received adequate attention.

It is understood, however, that crystalline formations cover the greater part of Russian America, British Columbia, Mexico, Central America, the West Indies, the eastern half of British America, and the interior of Greenland, though its western shores are covered with primary and tertiary formations; that the palæozoic group occupy the surface of that part of the Hudson Bay Company's territories lying between the Rocky Mountains and the great lakes, together with the western and southern shores of the Hudson Sea, and the north-western portion of the great American archipelago; that secondary formations prevail chiefly in the United States, especially between the Rocky Mountains and the Missouri; and that the tertiary series is chiefly prevalent in the great western plateau, which extends from the Arctic Ocean to the Gulf of California. The principal volcanoes and volcanic rocks occur in the Peninsula of Aliaska, the oceanic range of the Rocky Mountains, the table-lands of Utah, Mexico, and Central America, parts of Nova Scotia, Newfoundland, Labrador, and Greenland. For further details we refer the student to the corresponding paragraphs of the different countries of this continent.

16. **Minerals.**—Ever since its discovery, in the beginning of the sixteenth century, North America has been celebrated for the richness and variety of its mineral productions. The mines first wrought were those of Mexico and Central America ; but recently California has eclipsed all other countries, with the exception of Australia, in its inexhaustible supply of the precious metals.

We can here enumerate only the principal localities in which the most important minerals occur. *Gold* is principally found in California, British Columbia, Mexico, Central America, Canada, and the Alleghany Mountains. *Silver*, Central America, California, Canada, and in a vast number of localities on the table-land of Mexico. *Copper*, Canada, especially N. and E. of Lake Superior, which is one of the richest copper regions on the globe ; New York, Indiana, California, Mexico, Central America. *Lead*, Illinois, Wisconsin, Missouri, New York, California, Mexico, Central America, Canada. *Tin*, Mexico, Canada (near Lake Superior). *Zinc*, Central America. *Iron*, the Alleghanies, and numerous localities in the United States, Mexico, Central America, Canada. *Mercury*, Kentucky, Ohio, California, and the region S. of the great lakes. *Cinnabar* or sulphuret of mercury, California, Mexico. *Coal*, generally wherever the upper palæozoic strata abound, as in Pennsylvania, Michigan, Iowa, Missouri, California, Cape Breton, Nova

Scotia, British Columbia, Vancouver Island. *Sulphur*, Central America, especially in Guatemala. *Salt*, Utah, New York, Pennsylvania, Virginia, Massachusetts, Kentucky, Illinois, Missouri, Mexico, Honduras. *Marble*, Canada, United States, Honduras. *Precious Stones:* diamonds in California, jasper in Honduras.

17. **Botany.**—The flora of North America, including Central America and the West Indies, embraces wholly or in part no fewer than six of the twenty-five "phyto-geographic regions" into which the land surface of the globe is divided,—viz. the 1st, 4th, 5th, 15th, 16th, and 19th regions. For the names and precise limits of these regions we must refer to pp. 55 and 56 above, and for their more striking characteristics to the botanical sections under Europe, British America, the United States, Mexico, Central America, and the West Indies.

The New World has long been famed for the prodigious luxuriance and variety of its vegetation. Although we are far from being minutely acquainted with its natural history, it may be affirmed without hesitation that no other portion of the world of equal extent can rival it in the riches and splendour of its flora. Several years ago more than 15,000 species of flowering plants had been described as belonging to it, besides a proportionate number of cryptogamia. When the northern continent was discovered, one vast continuous forest covered the whole surface, from the St Lawrence and the great lakes to the Gulf of Mexico, and from the Rocky Mountains to the Atlantic, embracing an area of upwards of a million of square miles. Much of this ocean of vegetation has since been cleared away, though, to this day, hundreds of miles of unbroken forest exist in numerous localities; while boundless prairies, destitute of trees, but covered with tall grasses, occupy vast tracts in the north of the continent, and on the eastern side of the Rocky Mountains. The forest trees are extremely numerous in species, embracing many varieties of oak and pine, with the ash, beech, birch, cedar, chestnut, cypress, juniper, hickory, locust, maple, mulberry, poplar, and walnut. As the traveller passes northwards into the British territories, the variety of species is smaller, embracing mainly pines, larches, aspens, poplars, alders, hazels, and willows; while towards the shores of the Arctic Ocean the trees become fewer in number and more stunted in size, till at length the dwarf-willow, six inches in height, is the sole representative of the gigantic forests of the tropical and temperate regions. Among the more characteristic plants of North America are its azaleas, magnolias, fuchsias, dahlias, and rhododendrons; while the entire cactus tribe is peculiar to its tropical regions. Europe is indebted to the western continent for several of its cultivated plants, more especially maize, cocoa (from which chocolate is made), manioc or cassava, the potato, and the tobacco plant; while, on the other hand, America is indebted to European colonisation for wheat, barley, and the other kinds of corn, as also for rice, the bread-fruit tree, the sugar-cane, the coffee-shrub, and the cotton-plant. America does not contain a single indigenous species of the heath tribe, nor has a pæonia ever been found in it, except a solitary one observed by Douglas on the Pacific side of the Rocky Mountains. This mighty chain forms an impenetrable barrier between two floras nearly as different in character as if they had been separated by an ocean. Melville Island, lat. 75°, is the most northern point at which vegetation has been observed; while the Red River Settlement, on the southern frontier of the Hudson Bay Territory, is the highest latitude at which the cereals have been cultivated; though doubtless barley could come to maturity as far N. as Fort Chippewyan, lat. 59°, where the heat of the four summer months is four degrees higher than at Edinburgh.

18. **Zoology.**—The types of animal life indigenous to the western continent are in general inferior in size and strength to those of the eastern. The lion of the Old World is represented by the puma, and the tiger by the jaguar; though the gigantic condor of South America is more powerful and formidable than any bird found in the eastern hemisphere.

North America forms one of the six zoological kingdoms into which the land surface of the globe is divided. It embraces two (or, according to some, three) provinces, the first of which embraces Russian, British, and Danish America, and the second the United States. Usually Mexico and Central America are made to form a part of the South American kingdom; but we shall here, for the sake of uniformity, regard those countries as forming the third or tropical province of the northern continent. The zoology of the first or Arctic province of North America closely resembles, and is, indeed, for the most part, identical with, that of the corresponding province in Europe and Asia. Here the species are comparatively very few in number, and consist generally of the lowest orders of the respective classes; but this is in a large measure compensated for by the extraordinary number of individuals belonging to the different species, and occasionally, as in the case of the whales, by the gigantic dimensions of the forms. The colours are also of uniformly sombre hues. Not a bird is to be seen of brilliant plumage, not a fish nor mollusc with varied hues. The most conspicuous MAMMALS of this province are the white and polar bear, the moose and rein-deer, the musk-ox, beaver, white fox, racoon, marten, squirrel, sea-otter, minx, musk-rat, ermine, wolverine, lemming, hare, various seals, and numerous species of whale. Among BIRDS may be enumerated some sea-eagles, a few waders, with an immense number of other aquatic species,—as gulls, cormorants, divers, petrels, ducks, and geese. REPTILES are almost wholly wanting, being represented by a solitary tortoise. The ARTICULATA embrace a few insects of inferior species and numerous kinds of minute crustaceans. The majority of the MOLLUSCS belong to the order Tunicata, the remainder being Gasteropoda and a very few Cephalopoda. Among the RADIATA are a great many jelly-fishes, star-fishes, and sea-urchins. The fauna of the Temperate province of this continent also resembles that of the central provinces of Europe and Asia; for, though the species are almost all different, the families, and even the genera, are the same. The number of terrestrial species regarded as identical is constantly diminishing as the progress of science advances. (See under "United States," "Mexico," and "Central America.") The accompanying tables show the distribution of the land Vertebrata in the three provinces of this kingdom :—

NAME OF ORDER.	Total Number of Species.	Total Species in North America.	Arctic America.	Temp. America.	Tropical America.
MAMMALIA OF NORTH AMERICA.					
Quadrumana,	170	8	...	...	8
Carnivora,	514	109	36	50	109
Marsupialia,	123	4	...	1	4
Rodentia,	604	118	32	60	34
Edentata,	28	12	...	1	12
Pachydermata,	39	4	...	...	4
Ruminantia,	180	13	10	10	7
Cetacea,	75	24	24	...	...
Totals,	1733	292	102	122	178
BIRDS OF NORTH AMERICA.					
Rapaces,	...	54	10	22	53
Scansores,	...	127	5	12	122
Oscines,	...	333	14	72	319
Gallinæ,	...	49	4	10	45
Grallatores,	...	87	21	36	59
Natatores,	...	122	49	26	26
Totals,	6226	772	103	178	624

NAME OF ORDER.	Total Number of Species.	Total Species in North America.	Arctic Amer.	Temp. America.	Tropical America.
REPTILES OF NORTH AMERICA.					
Testudines,	69	20	1	19	10
Sauria,	203	23	3	8	20
Ophidia,	265	32	2	28	30
Amphibia,	120	40	3	38	2
Totals,	657	115	9	93	62

19. **Ethnography.**—See corresponding article under "South America."

RUSSIAN AMERICA.

Boundaries.—N., the Arctic Ocean; W., Behring Strait and Sea of Kamtchatka; S., the Pacific Ocean; E., British America, from which it is separated for the most part by the meridian of 141° W.

The Russian territory also embraces a long narrow belt on the W. coast, contiguous to the main portion, extending eastward to the Sea Alps, and southward to Simpson River. Lat. 55°—71° 23′ N., lon. 141°—172° 30′ W. New Archangel, the capital of Russian America, on Sitka Island, off the S.E. coast, is on the same parallel of latitude as Aberdeen, Aalborg, Riga, Tobolsk, Fort York, and Nain in Labrador.

Area and Population.—The area is reckoned at 394,000 square miles, or three times the area of the British Islands, and the population at 66,000, being only one person to every six square miles.

Surface.—With the exception of a narrow strip of land along the N. and N.W. coasts, and the basin of the Colville River the lower part of which is but little raised above the sea, the whole territory consists of an elevated plateau about 3000 feet high, surmounted in the S.E. by a very lofty mountain chain, the highest peaks of which are Mount St Elias, 17,850 feet, the culminating point of the North American continent, and Mount Fairweather, 14,783 feet, both of which are extinct volcanoes. Several other volcanic mountains, some of them active and others extinct, range along the southern coast, especially around Cook Inlet, attaining an elevation far surpassing the limit of perpetual snow; while in the Aleutian Isles, which form an insular prolongation of the Peninsula of Aliaska, no fewer than 35 volcanoes are enumerated, the majority of which are in a state of activity.

NEW ARCHANGEL, on Sitka Island, is the capital of Russian America, the headquarters of the Russo-American Company, and the only place in any way deserving the name of a town in the Russian territory. It carries on a brisk export trade in fish and peltry with Petropaulovski, the principal Russian port in Kamtchatka, from which these commodities find their way to St Petersburg.

Capes.—Point Barrow (lat. 71° 23′ N.) the most northern projection of the American continent; Icy Cape and Cape Lisburne, in the N.W.; Cape Prince of Wales, the most western extremity of America; Cape Romanzoff and Cape Newenham, on the west coast; Krentzina Point, the extremity of the Peninsula of Aliaska, which is 350 miles long by 25 broad, and contains several active volcanoes.

Islands, Bays and Straits, Rivers and Lakes.—See under "North America."

Climate.—The climate is described as very humid, especially on the S.W. coast and Sitka Island. At the latter place Wrangell found, in 1828, that only 66 days were dry in the whole year, while for 128 days rain fell without intermission. Snow was frequent, but did not last long. The temperature, though warmer than on the eastern coast of Asia, is considerably more severe than in corresponding latitudes on the western coast of the Old World: for example, while the mean annual temperature at Sitka is 45°.30 Fah., at Bergen, in Norway, it is 47°.

Natural Productions.—The soil is generally sterile; grain crops refuse to grow, except in the Sitka archipelago and the adjacent coast of the mainland, where a little barley, rye, and oats are raised. The alder and birch attain the dimensions of shrubs in the interior; and forests of coniferous trees clothe the mountains on the S.E. coast.

The chief value of the country to the Russian Government consists in its fish and its fur-bearing animals, the principal of which are the sea-otter, the brown and polar bear, the Arctic fox, and the Arctic hare. Of cetaceous animals the Aleutians distinguish 4 species of balæna. The Russian American Company, incorporated 1799, for fishing and hunting fur-bearing animals, have 50 ships of all sizes engaged in the collection and conveyance of peltry; besides 2 frigates and 2 corvettes, maintained by the Russian Government. Its constitution and privileges closely resemble those of the Hudson Bay Company in British America.

Ethnography.—The natives of Russian America are Esquimaux and Indians, numbering together about 50,000; the Aleutians do not exceed 8700; while the remainder, about 6000, are Russians.

The Esquimaux are for the most part confined to the coasts, as they support themselves mainly by fishing. The Indians occupy the interior, and subsist by hunting and fishing in the streams, and by procuring skins for the Russian American Company. The Aleutians are skilful fishers and hunters, and, in pursuit of the sea-otter, will undertake voyages of many miles in length, from island to island, in their fragile *baidares*—a kind of light boat, composed of the skins of animals drawn tightly over a framework of wood or of fish-bones. Each boat is made to hold one person, who sits in a round hole, just fitted to the size of his body. In summer they live in huts, and in winter in spacious excavations in the earth, each of which accommodates from 50 to 150 persons.

GREENLAND, OR DANISH AMERICA.

Boundaries.—N. and E., the Arctic Ocean; W., Kennedy Channel, Smith Sound, Baffin Bay, and Davis Strait; S. and S.E., the Atlantic. Lat. 59° 49′- 81° N., lon. 20°—75° W.

Greenland is now universally regarded as an island, or group of islands united together by everlasting bonds of ice, and deeply penetrated on its western side by narrow inlets which resemble the *fiords* of Norway. The highest latitude hitherto reached by foreigners is 81° 20′—a point to which Dr Kane succeeded in getting in 1854, when accompanying the American expedition in search of Sir John Franklin.

Area and Population.—The area of Greenland is roughly estimated at 380,000 square miles, and the population at 9892, of whom about 300 are Danes, the remainder being Esquimaux.

Surface.—The surface is generally high, rocky, and barren. The elevated portions are covered with perpetual snow; the glaciers extend in many places to the sea-shore; while the interior is supposed to be one vast field of ice.

Divisions.—The Danish Government has divided the country into two Inspectorates—a southern and a northern—which are separated by the Long Fiord, lat. 67° N. There are thirteen settlements—six in the S. and seven in the N., besides two missionary stations. The principal villages are Julianshaab, Frederickshaab, Christianshaab, Uppernavik, and Good Hope, all on the west coast.

Climate and Natural Productions.—The mean annual temperature of Greenland is probably about 27°.5 Fah.; but the difference between the highest and lowest temperatures (124°) is perhaps without a parallel.

In July the thermometer sometimes stands as high as 84°, even in the shade, while in January it often sinks as low as 40° below zero. July is the only month of the year in which no snow falls; but the seas do not usually begin to freeze till January. The freezing process proceeds with great rapidity, and is accompanied by a dense fog which is supposed to consist of minute particles of ice. The vegetation mainly consists of grasses and lichens in the north, and of a few scattered birches, alders, and willows in the south, where are also raised small quantities of corn, potatoes, and kitchen vegetables. Copper ore has recently been discovered in Disco Island, in lat. 70° N.

Ethnography.—The natives, who are named Esquimaux, are a peculiar race, allied to the Mongolian family.

They are characterised by a short squat stature and dark skin, and usually employ themselves in fishing and seal-hunting. They live chiefly on seals and whale-blubber, and are clothed in skins. In summer, their houses are tents formed of bone and the skin of the dog-fish, while in winter they live in holes dug in the ground and covered a-top with turf. It is now ascertained that this portion of the New World was discovered by a Norwegian, as far back as A.D. 981. It was soon after colonised from Iceland, but the intercourse between the colony and the mother country gradually diminished, and ultimately ceased, till at length the existence of Greenland was unknown to European nations. In 1587 it was re-discovered by Davis, and in the following century the Danes re-established a communication with the lost colony. The natives have been converted to Christianity by Moravian missionaries. The commerce of Greenland with Denmark is carried on with about twelve vessels. These annually export, on an average, 3600 tons seal-oil, 4300 of whale-oil, 37,000 seal-skins, 29,000 fox-skins, 18,000 skins of rein-deer, and 19,000 lbs. of eider-down. The imports consist chiefly of wheat, brandy, tobacco, coffee, sugar, and firewood.

BRITISH NORTH AMERICA.

Boundaries.—N., the Arctic Ocean; N.W., Russian America; W., the Pacific; S., the United States (from which it is separated for the most part by the parallel of 49°), the great lakes, and the River St Lawrence; E., the Atlantic, Davis Strait, and Baffin Bay.

Area and Population.—The area is roughly estimated at 3,600,000 square miles, or nearly the size of the continent of Europe; and the population at 3,244,000, or about the present population of Scotland, being less than one person to every square mile.

Only a small portion of this immense territory is actually colonised, and by far the larger part of it has a soil too sterile and a climate too severe to admit of the successful pursuit of agriculture.

Surface.—An elevated plateau in the W., traversed by a lofty mountain-chain, which increases in elevation from N. to S., and rises in many places above the limit of perpetual congelation.

East of this is an immense plain of slight elevation, which gently inclines in the direction of the Hudson Sea, its eastern boundary. This plain is traversed in the direction of its greatest length by a chain of lakes unparalleled for their number and magnitude. The principal members of this chain belong to the basin of the St Lawrence, which is throughout highly fertile and admirably adapted for colonisation. North of this, and between the Hudson Sea and the Atlantic, lies the barren and inhospitable region of Labrador; while, in the still higher latitudes, the surface is a monotonous stony waste, with a low and scanty vegetation, abandoned to the Esquimaux, the rein-deer, and musk-ox. Here the winter cold is terrific, and the subsoil permanently frozen.

Political Divisions.—British North America comprises three great divisions—viz. the Hudson Bay Company's Territory in the W. and N.; and Canada, and the Lower Provinces in the S.E., occupying the basin of the St Lawrence. Each of these divisions will be described separately.

HUDSON BAY COMPANY'S TERRITORY.

Boundaries.—N., Arctic Ocean; W., Russian America and the Pacific; S., United States and Canada; E., the Atlantic. Lat. 49°—70° N., lon. 55°—141° W.

Area and Population.—The area is approximately estimated at 3,170,000 square miles; and the population, according to the Company's census in 1846, at 158,000, of whom about 40,000 were Indians, and the remainder whites and half-breeds.

Divisions.—The Rocky Mountains and Hudson Sea divide this immense territory into three vast provinces—viz. Columbia in the W., Rupert's Land in the centre, and Labrador in the E.

COLUMBIA embraces the extensive region lying between the Rocky Mountains on the E. and the Pacific Ocean and Russian America on the W., and between the United States frontier and the Arctic Ocean. Its length from N. to S. is about 1400 miles, with a breadth varying from 500 to 200 miles. Its area may amount to about three times that of the British Isles. The Simpson River, flowing W. to the Pacific, divides it into two nearly equal portions, the northern of which has been very imperfectly explored; but in soil, climate, vegetation, and animals, it appears to resemble the adjacent Russian territory. The rivers Turnagain or Liard, and Peace River, two of the principal headwaters of the Mackenzie, are its chief streams.

BRITISH COLUMBIA.—That portion of Columbia lying S. of Simpson River and the Russian Territory, previously known as New Caledonia, is now named British Columbia. It extends from lat. 49° to 55° N., or from Washington Territory to the Russian dominions. It is nearly 500 miles long by 400 miles broad, and has an area of 220,000 square miles, or nearly twice the area of the British Isles. It is watered by three noble rivers—the Simpson in the N.; the Frazer, with its affluent the Thomson, which nearly intersects it from N. to S.; and the Salmon River from the N.E. The climate differs but little from that of Great Britain, except that the annual fall of rain is much greater. The greater part of the country is of tertiary formation, with the exception of the Sea Alps, extending longitudinally through its centre, which are of trap. The soil is a rich alluvium, admirably adapted for growing corn. Only a little barley, oats, and rye, can be raised by the Russian settlers to the north, but here even wheat can be raised in perfection, especially in the basin of the Frazer. It is well-stocked with excellent timber, has extensive deposits of bituminous coal, well fitted for the production of steam, while a magnificent gold-field was discovered in 1860, at the confluence of the Frazer with the Thomson, which is now attracting a crowd of miners from California and other places. A governor has also been appointed by Parliament, who, with the Privy Council at home, will have the power of framing the laws by which the colony is to be ruled. This mode of government is to continue for five years, unless in the mean time the settlers find themselves in circumstances to elect a representative assembly. The main objection to the colony is its vast distance from the mother country. The Nelson River, however, is navigable throughout, from Hudson Bay to Lake Winnipeg, and, with the exception of a single rapid, the Saskatchewan, is also navigable for boats and canoes from that lake to its source in the Rocky Mountains, a distance of 1400 miles. The Columbia, again, which enters the Pacific about 150 miles S. of Vancouver Island, is navigable for a great part of its course; and by the treaty of Oregon its entire navigation is open to British vessels. The sources of this river and of the Saskatchewan are so close together that Sir George Simpson declares he "could fill his kettle for breakfast out of both at the same time." He says "they are not 14 feet apart." With the exception, therefore, of a few obstructions, which labour and ingenuity could soon overcome, there is water-carriage the whole way from London to the Rocky Mountains. As the Hudson Sea is free from ice for only a few months in the year, the probability is that the actual route to Lake Winnipeg will be by the St Lawrence and Lake Superior, through the Rainy Lake and Lake of the Woods—an undertaking which, though it may seem at first chimerical, will probably prove to be far less arduous than the overland route which Russia has established between the Sea of Ochotsk and the Baltic, or between Sitka and St Petersburg In the mean time, however, railway communication is likely to anticipate these and all other routes of navigation. Already a company of British capitalists are busily surveying a line of railway across the Rocky Mountains to connect Frazer River with the Canadian Grand Trunk Railway, with the view of directing the commerce of the East through British territory. The opening of the ports of China and Japan to the nations of the West has given such an impetus to commerce in the Pacific, that this undertaking will probably be the most successful that has been attempted for many years. As yet there are no towns in British Columbia, with the exception of New Westminster, on Frazer River, which is intended to be the capital of the colony; but the Hudson Bay Company have established several forts or trading posts, of which the following are the principal—Forts Langley, Hope, Yale, Alexandria, and George, on Frazer River; Fort Thompson, on Thomson River; Fort Simpson at the mouth of Simpson River, near the Russian frontier.

Vancouver Island lies S.W. of British Columbia, from which it is separated by Queen Charlotte Sound (in some places only 10 miles wide), and the Gulf of Georgia. The Strait of Juan de Fuca, 18 miles wide, separates it from the United States territory of Washington. Lat. 48° 20′—51° N., lon. 123°—128° W. Length from N.E. to S.W., 300 miles; greatest breadth, 75 miles: area, 14,000 square miles; native population, 11,463 The natives, who are called Wakash, belong to twelve tribes, of which the Kawitchin, Quaquidto, and Nootka, are the most numerous. This fine island, by far the largest on the W. coast of America, came into the possession of Great Britain by the Oregon treaty, which determined the boundary between the United States and British North America. In 1849 the British Parliament consigned it by charter to the Hudson Bay Company, who had previously erected Fort Victoria on its S. shore, but reserved to itself the right of re-purchasing it from the Company when the licence of trade over the Indian territories should expire, that is, in 1859. The surface of Vancouver Island is highly diversified; a chain of lofty mountains occupies the interior throughout its entire length. The soil, consisting in many places of rich prairie land, is well adapted for the growth of wheat and the other cereals. The coast abounds with fine natural harbours, which will afford protection to ships in all weathers. The only navigable river yet discovered is the Nimkis, in the N.E. of the island, where also coal of an excellent description is found by merely scratching the surface. Fish of the most valuable species are very numerous around the coasts. Land animals, important for their skins, embrace the beaver, racoon, and land-otter. Mean temperature of January 32°, and of July 63°. Frosts are slight and of short duration; but the winter is generally very stormy, and heavy rains are frequent at that season, while at other seasons dense and long-continued fogs temper the excessive heat. The interior of the country is little known, but is described as fertile and richly wooded. The importance of Vancouver is greatly enhanced since the discovery of gold in the adjacent colony of British Columbia; and there can be no doubt that its position, agricultural capabilities, excellent harbours, and valuable minerals, destine it ere long to occupy a prominent place among British colonies. Victoria, the capital, and the residence of the British governor, is situated on Royal Bay, near the S. extremity of the island.

Queen Charlotte Island lies about midway between Vancouver Island and the Sitka Archipelago, and 50 miles W. of British Columbia, of which it is a dependency. Length 165 miles; breadth from 10 to 60; area 4000 square miles. The coasts are low, but the interior is mountainous and clothed with forests. The native population, named Skittagets, are described as among the best specimens of the Indian race, apt to adopt the customs of civilised life, ingenious and industrious, and naturally as white as the inhabitants of S. Europe.

Rupert's Land, between the Rocky Mountains and Hudson Sea, and between the Arctic Ocean and the United States, is the central and principal subdivision of the Hudson Bay Territory. Lat. 49°.

Fort York in the centre of the entire territory, and the Company's principal trading station, situated at the mouth of the river Nelson and on the W. shore of

estimated at 2,040,000 square miles, or twenty-one times the area of the British Isles. The surface is generally low and level, partly sloping towards the Arctic Ocean and partly towards the Hudson Sea and James Bay. The whole territory lying between the limits above stated, embraces three great natural regions, which are subdivided by the Company into twenty districts, each containing one or more factories or fur-trading establishments. If a line be drawn westward from the shore of Hudson Bay (lat. 62°) through Northlined Lake and Lake Athabasca, thence along Slave River to Great Slave Lake, and thence down the Mackenzie River to the Arctic Ocean; and another line be drawn from Lake Athabasca S. through Lakes Wollaston, Deer, Winnipeg, and Lake of the Woods, to Lake Superior, we shall have the boundaries of the three regions just indicated. The region lying to the N.E. of the first line may be called the *Barren Region*, as little or no vegetation is seen except lichens, mosses, and a few stunted plants. The region lying around the S. and W. shores of Hudson Bay, may in like manner be styled the *Woody Region*, as the soil is usually covered with magnificent forest trees. The entire remainder, stretching westward to the Rocky Mountains, and northward to the Arctic Ocean, may be denominated the *Prairie Region*, as it consists for the most part of immense plains devoid of timber, but clothed with luxuriant pasture grasses and sedges. The only important forests in this region are along the E. base of the Rocky Mountains. On the whole it is well adapted for becoming an agricultural country, as all the European cereals, together with potatoes, turnips, and other useful vegetables, can be here brought to maturity. The several districts and trading establishments in Rupert's Land, are as follows:—

BARREN REGION.

Districts. *Forts.*

Mackenzie River—Good Hope, Norman, Simpson (Mackenzie River), Franklin (Great Bear Lake).
Great Slave Lake—Providence, Resolution, Reliance (Great Slave Lake).
Churchill—Churchill (Hudson's Bay).
Athabasca—Chippewayan, Font du Lac (Lake Athabasca).
Peace River—Liard, Halket (Liard River), Vermilion (Peace River).

PRAIRIE REGION.

Districts. *Forts.*

Lesser Slave Lake—Assiniboin (Athabasca).

Saskatchewan—Carlton House, Manchester House, Edmonton House (N. Saskatchewan), Chesterfield House (S. Saskatchewan).

English River—Buffalo House, La Crosse (Beaver River).

Cumberland—Cumberland House (Saskatchewan).

Norway—Norway House, Berens House, n. (Lake Winnipeg).

Swan River—Alexander (Lake Winnipeg), Brandon House, Birdstail, Pelly, Hibernia (Assiniboin).

Red River—Red River Settlement, Garry, Assiniboin (at confl. of Red and Assiniboin rivers), Grant House (Mouse River).

WOODY REGION.

York—York, Port Nelson (Hudson Bay), Rock House (Hill River).

Nelson—Nelson (Churchill).

Island—Oxford House (Hill River)

Severn—Severn, Severn House (Severn River).

Albany—Albany, Martin Fall, Gloucester House (Albany).

Rainy Lake—William (L. Superior)

Moose—Moose Factory, Brunswick House (Moose River).

Abbitibbe—Hannah Bay House (James Bay), Abbitibbe House (Abbitibbe).

Ft. Good Hope, on Mackenzie River, and *Ft. Macpherson*, on Pearl River, are the two most northern of the Company's factories. The pine and the alder are abundant in their neighbourhood, amongst the valleys of the Rocky Mountains. The *Pinus alba*, the king of the Arctic forests, attains here a height of 70 feet, and is upwards of three feet in diameter at the base. Barley ripens at *Ft Norman* (lat. 65°), and potatoes grow, but of inferior quality. Good crops of oats have been raised at Ft. Simpson. *Ft. Franklin*, on the western shore of Great Bear Lake, has a mean annual temperature of 14° below freezing point, a minimum heat of 58° below zero, and a maximum heat of 80° Fah. *Ft. Churchill*: here the ground is buried under snow from the middle of October to the middle of May, and the ice does not break up before the middle of July. At *Ft. Chippewayan* there is not the slightest cultivated vegetation. Coarse grass is yielded by the swamps, and cut for the few cattle required at the station, which have to feed on fish when this source fails. Mean annual temperature 2° below the freezing point, the minimum heat 31° below zero, and the greatest heat 97° Fah. Wheat is raised at *Ft. Liard*, and yields a good return in favourable seasons, and potatoes thrive admirably.

The *Red River Settlement* was founded by the Earl of Selkirk in 1813. It is situated on the banks of the Red River, which has its upper course in the United States. The population, 6523 in number, is composed chiefly of emigrants from the Highlands of Scotland, together with retired servants of the Hudson Bay Company, and a few native Indians and half-breeds. The soil is very fertile, and large crops of grain are raised; and there are natural forests of oak, elm, maple, and pine. The settlers possess great numbers of sheep and cattle, and most of the domesticated animals of England have been introduced. The rivers freeze in November and open in April; but Lake Winnipeg remains frozen till the end of May. This is the only colony to be found in the boundless tract of country known as Rupert's Land. It has a governor, council, recorder, sheriff, coroner. Trial by jury also has been introduced into the colony.

Fort York, the principal station and capital of the Hudson Bay Company, is situated near the south-western angle of Hudson Bay, at the confluence of the Nelson and Hayes rivers. In its vicinity are forests of stunted pine. The cold during the winter months is fearfully intense, the thermometer descending sometimes as low as 50° below zero. In rooms with a constant fire brandy freezes into a solid substance. The mean annual temperature is 23°, of July 59°. In summer the surface thaws to the depth of 10 or 12 inches, and becomes a clammy mud; and, but for supplies imported from more temperate regions, existence would be impossible.

Labrador, an immense peninsula between Hudson Bay and the Atlantic, and between Hudson Strait on the N. and Lower Canada and the Gulf

of St Lawrence on the S., forms the eastern portion of the British territory—the western half of it alone being under the authority of the Hudson Bay Company.

Greatest length, from E. to W., 1000 miles; greatest breadth, from N. to S., 850 miles. Area estimated at 420,000 square miles, or five times the area of Great Britain. Population about 5000, or only one person to every 84 square miles. Nain, a mission station near the middle of the east coast, is in the same latitude as New Archangel, Fort York, Aberdeen, Riga, and Tobolsk. Labrador is subdivided into Rupert River or East Main in the W., and Labrador Proper in the E. The former of these contains the principal trading stations of the company—viz. Rupert House and East Main House, on the coast of James Bay; Whale House, on Hudson Bay; and Hudson Bay Company's House, on Lake Mistassinic, near the Canadian frontier. The only sites of importance in Labrador Proper are four settlements of the Moravian missionaries—viz. Nain, Okhak, Hebron, and Hopedale, all on the N.E. coast. The entire N. and centre of the peninsula consists of an immense low-lying plain; the S. and S.E. is more elevated, and is surmounted by a range of hills called the Wotchish range, which, in Mount Thoresby, attains an elevation of 2730 feet. This chain originates several considerable rivers, as the Koksak, flowing N. into Ungava Bay, and the Clear Water, Whale, East Main, and Rupert, into James Bay. The shores are desolate and sterile in the extreme, but the interior is wooded and well watered. The climate is very severe, but less foggy than in Newfoundland. Corn will not ripen, and only hardy kitchen vegetables can be raised. The inhabitants, who are nearly all Esquimaux, are generally occupied in fishing, and fish forms their principal article of diet. The cod, salmon, and herring abound on the coasts, but the most valuable fisheries are those of the seal and whale, which give employment to about 20,000 British subjects, besides the crews of about 400 vessels from the United States.

CANADA.

Boundaries.—The natural boundary on the N. is the watershed which divides the basin of the Hudson Sea from that of the St Lawrence; W., Lake Superior and its affluent the Kiministiquia; S., Lakes Huron, Erie, and Ontario, the river St Lawrence, the parallel of 45°, the States of New York, Vermont, New Hampshire, and Maine, and the British province of New Brunswick; and E., the Gulf of St Lawrence and Labrador. Lat. 42°—50° 40′, lon. (including Anticosti) 61° 54′—90° 20′.

Montreal, the largest city in Canada and the chief seat of commerce, situated near the centre of the country, is in the same latitude as Oregon City, St John's (New Brunswick), Lyon, Turin, Venice, Simferopol, and the centres of the Sea of Aral and Lake Balkash.

Dimensions.—Length from Point Gaspé to the W. end of Lake Superior, 1275 miles; average breadth, 200 miles; area, 357,822 square miles, of which 147,832 belong to Upper, and 209,990 to Lower Canada. Canada is, therefore, three times the size of the British Isles; but the inhabited portion does not as yet greatly exceed the area of Scotland, though it is estimated that in ten years hence, should the present rate of immigration continue, it will not fall much short of that of Great Britain.

Population. — In 1851 the population of Upper Canada was 952,004, of Lower Canada 890,261—being a total of 1,842,265; but in 1856 it had increased to upwards of 2,500,000, being seven persons to each square mile. Upper Canada has more than doubled its population in the last ten years; but Lower Canada has required 25 years to double its population. The Indian aborigines do not exceed 40,000 in number.

Political Divisions.—Prior to 1841 Canada was divided into two provinces, known as Upper Canada or Canada West, and Lower Canada or Canada East, separated by the Ottawa, and subdivided into counties, of which the former contained 42 and the latter 59; but in 1841 the two provinces were united under one government, with a common capital and treasury. As they differ, however, in many respects, and as the old names are still in general use, we shall consider them separately.

UPPER CANADA.—Toronto 43, Kingston 20, Belleville 8, Coburg 8, Port Hope 8, Hamilton 22 (Lake Ontario), Prescott, Brockville (St Lawrence), Niagara, Queenstown (Niagara), Sherbrooke, Port Stanley (Lake Erie), Windsor (Detroit), Port Sarnia, Goderich (Lake Huron), Collingwood (Georgian Bay), OTTAWA or Bytown 12 (Ottawa), Perth, n. (Rideau), London 15 (Thames).

LOWER CANADA.—Quebec 62, Fraserville, Three Rivers 6, Sorel, Montreal 75, La Prairie (St Lawrence), Chambly, St John's (Richlieu).

Descriptive Notes.—*Toronto*, formerly York, the capital of Upper Canada till the union of the two provinces, and for a short time subsequently the metropolis of all Canada, is situated on the N.W. shore of Lake Ontario, between the mouths of the Humber and Don. In regard to population it is the third city in Canada; in 1817 it had only 1200 inhabitants; in 1842 it had 15,000; in 1852, 30,763; and in 1856, no fewer than 42,500—thus doubling its population every ten years. Toronto is the grand emporium for the wheat of Canada, which it exports to Britain, the Lower Provinces, and the United States. The city presents an elegant appearance; streets wide; numerous and spacious public buildings, among which is a university with two richly-endowed colleges. *Kingston*, a considerable city at the N.E. extremity of Lake Ontario, and for a little time the capital of the united province, is the entrepôt of the trade between Upper and Lower Canada; but since the completion of the internal canals its carrying trade has much declined. It is defended by several towers, and is one of the cheapest places to live at in Upper Canada. *Hamilton*, a thriving town on the Grand Trunk Railway, and at the W. extremity of Lake Ontario, has an active and increasing trade. *Niagara*, a flourishing town at the mouth of the river of same name which unites Lakes Erie and Ontario, has a brisk traffic by steam with New York, Toronto, and Kingston. Races are annually held in its vicinity. About 15 miles farther up are the celebrated Falls of Niagara, the most magnificent in the world. The river is precipitated over a vast ledge of silurian limestone, forming two cataracts, separated by Goat Island. The Horse-Shoe Fall, on the Canadian side, is 1800 feet across and 158 feet in perpendicular depth, while the American Falls are 600 feet broad, and 163 in depth. It is estimated that the falls discharge 100 million tons of water per hour. A little above the commencement of the cataract a cable suspension bridge, 800 feet in span, and at an elevation of 230 feet, has been erected across the river. OTTAWA, formerly Bytown, the largest town on the river Ottawa, at the head of its navigation from Montreal, and now, after several years' litigation, selected as the future capital of Canada. Though situated on the edge of a dreary wilderness, and at a distance from the great highways of travel and commerce, it possesses several important advantages as the capital of the country. It enjoys unrivalled water power, which has already been turned largely to account in the lumber trade: the supply of magnetic iron ore in the vicinity is of unlimited extent, though coal is wanting to turn it to proper account; and the southern side of the river is reckoned the most fertile and salubrious in all Canada. *London*, a beautiful town on the Thames, in the centre of the Canadian peninsula, is fast rising into importance. *Quebec*, the ancient capital, and present stronghold of Canada, is situated on the left bank of the St Lawrence, at the influx of the St Charles River. It is the great entrepôt for the trade of Canada with Great Britain, the West Indies, &c., and shipbuilding is very extensively carried on. A railway 375 miles long has been projected to connect it with Halifax, which is completed as far as Fraserville. Quebec was founded by the French in 1608, was taken by the British in 1629 and 1759, and finally ceded to Great Britain in 1763: near the city are the heights of Abraham, on which, in 1759, was fought the action rendered memorable by the fall of Wolfe and Montcalm, the British and French commanders. *Three Rivers*, one of the oldest towns in Canada, on the left bank of the St Lawrence, midway between Quebec and Montreal, and at the mouth of the St Maurice, here divided into three channels, and hence the name Three Rivers: there are extensive iron forges and foundries actively at work—iron ore being abundant in the neighbourhood; large lumbering operations are also carried on. *Montreal*, the largest, handsomest, and most commercial city in Canada, is situated on an island of the same name in the St Lawrence, 15 miles above its confluence with the Ottawa. Its architecture is on a scale of magnificence which is rivalled by few of the finest cities in Europe The Roman Catholic cathedral is a fine building capable of containing 10,000 persons, and the churches, banks, colleges, market, and court-houses, are the admiration of all strangers. It is the centre of an extensive railway system, and the natural outlet for the products of the vast grain countries which border the great lakes of Canada. The Victoria Bridge, opened in August 1860, is the most magnificent viaduct in the world. The commerce in fur has greatly declined, but it has increasing trade in cast-iron founding, distilling, brewing, and shipbuilding, with factories for soap, candles, tobacco, hardware, and floorcloth. Montreal was founded in 1640, and taken from the French in 1760.

Capes.—Gaspé Point, the most eastern point of the mainland of Canada; East Cape, the eastern extremity of the Island Anticosti; Point Pelé or South Foreland, in Lake Erie, the southern extremity of Upper Canada.

Islands.—Anticosti and the Magdalen Islands, in the Gulf of St Lawrence; Montreal and Laval, in the St Lawrence, at the mouth of the Ottawa; Amherst and Wolfe Island, in the east of Lake Ontario; Long Point and Point Pelé, in Lake Erie; Manitoulin, in Lake Huron; Isle Royal, in Lake Superior.

Gulfs and Straits.—Gulf of St Lawrence, between Canada and Newfoundland; Bay of Chaleurs, between Lower Canada and New Brunswick; Georgian Bay, the eastern part of Lake Huron.

Mountains.—Lower Canada is traversed from N.E. to S.W. by the Notre Dame, 3768 feet high, and Green Mountains, which separate the basin of the St Lawrence from that of the St John and Bay of Chaleurs; and by the Wotchish and Mealy Mountains, 1500 feet, between Hudson Bay and the Gulf of St Lawrence. These last are covered with perpetual snow. In Upper Canada there are no eminences deserving the name of mountains.

River System.—Canada is almost wholly comprised within the basin of the St Lawrence, the total length of which, from the source of the St Louis to Point Gaspé, is estimated at 1800 miles, and the area at 297,000 geographical square miles, of which 94,000 square miles are covered with the waters of the great lakes. The river receives different names in the different parts of its course—as, the St Louis, above Lake Superior; the St Mary, between Lake Superior and Lake Huron; the St Clair, between Lakes Huron and St Clair; the Detroit, between Lakes St Clair and Erie; the Niagara, between Lakes Erie and Ontario; the Iroquois, between Lake Erie and Montreal; and the St Lawrence between that city and Gaspé Point.

Basins.	*Cities and Towns.*
St Lawrence,	Quebec, *Three Rivers, Sorel* or *William Henry,* Montreal; *Prescott, Brockville;* Kingston, *Belleville, Coburg, Port Hope,* Toronto, Oswego, Hamilton; *Niagara, Queenstown;* Buffalo, Cleveland, Sandusky City, DETROIT; *Sherbrooke, Port Slaney; Windsor; Pt. Sarnia; Goderich, Collingwood.*
Saguenay, *l.*	*Chicoutimi,* five falls, rises in L. St John.
Chaudiere,	Quebec, n., celebrated falls; rises in L. Megantic.
St Maurice, *l.*	*Three Rivers;* from Ls. Kempt & Metawin.
St Francis,	*Drummond,* Stanstead.
Richlieu, or St John's, from Lake Champlain.	*Sorel* or *William Henry; Plattsburg, St Albans, Burlington, Montpelier.*
Ottawa,* *l.*	Montreal, OTTAWA, rises in L. Temiscaming.
Rideau,	Ottawa, *Peth.*
Ouse, *l*	*Port Maitland,* Brantford.
Thames, *l.*	London.
Severn, *l,* from L. Simcoe, falls into Georgian Bay.	*Atherby, Barrie.*
French River, *l.* from L. Nepissing,	*Recollet Fall.*
Grand River (into L. Michigan),	*Ionia,* Lansing.
St Joseph (into L. Michigan),	*Berrien.*
Neepigon, *l.* (from L. St Ann into L. Superior),	Neepigon House, on L. St Ann.
Arrow, or Pigeon, *l.*	*Port Charlotte.*

5.—Canada is famous for its magnificent lakes, one of which—Lake Superior—is the largest sheet of fresh water in the world. They are all situated in the basin of the St Lawrence, the five largest of them being enormous expansions of that river, while the remainder are drained by its tributaries. The following table gives the elevation and depth of the five principal lakes.

NAME OF LAKE.	Extreme Length in Miles.	Extreme Breadth in Miles.	Area in Sq. Miles.	Elevation above Sea-level, in Feet.	Mean Depth in Feet.
Superior, .	400	160	32,000	630	900
Michigan, .	350	90	20,000	578	1000
Huron, . .	250	170†	30,000	584	1000
Erie, . .	240	60	6,580	565	120
Ontario, .	180	60	5,300	232	500

Their united area is 93,880 square miles, being more than one-fourth of the entire area of Canada, or about two-thirds of the area of the Caspian Sea. The elevation above the sea of the first four is nearly equal, but the difference of level between Lakes Erie and Ontario is very great; and here occur the stupendous Falls of Niagara, where the river suddenly precipitates its waters to a depth of 163 feet. The depth of the first three is considerable; but Lake Erie is shallow, and gradually, though slowly, in process of filling up. These lakes are never entirely covered with ice, but the bays and inlets are annually frozen up; and on Lake Superior the ice extends to a distance of about 70 miles from the shore. The other principal lakes are the *St Clair*, between Lakes Huron and Erie; the *St John*, drained by the Saguenay; the *Megantic*, drained by the Chaudière; Lakes *Kempt* and *Matawin*, by the St Maurice; *Tenniscaming*, by the Ottawa; *Simcoe*, by the Severn; *Nipissing*, by the French River; and *St Ann*, or *Red Lake*, by the Neepigon.

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* The area of the Ottawa basin is estimated at 80,000 square miles; its total length is about 450 miles.

† Including Georgian Bay.

Climate.—The *climate* of Canada is what geographers call excessive, both the heat of summer and the cold of winter being much greater than in corresponding latitudes in Europe.

Though the mean annual temperature is 44° in the S., and 32° in the N., the extremes of heat and cold range from 102° above to 36° below zero; but the dryness of the air, and the absence of high winds, greatly mitigate the cold of winter, rendering the climate salubrious, and highly conducive to longevity. Fatal epidemics, and even contagious diseases, are almost unknown; and persons subject to coughs and colds suffer far less than in Great Britain. The sky is remarkable for its purity and transparency, and fogs are rarely seen. In Lower Canada winter begins about the end of November, and lasts till the end of April; but in the upper province it is considerably shorter, and it sometimes passes without almost any snow. In the vicinity of the great lakes winter is much milder than in the interior; but the St Lawrence is usually frozen over, for five months in the year, as far down as Quebec. The average depth of snow is 30 inches, and the mean fall of rain 22 inches.

Geology.—By far the greater portion of Canada, especially the entire central and northern parts, from the western extremity of Lake Superior to the mouth of the St Lawrence, consists of *Crystalline* rocks. *Silurian* strata line both banks of the St Lawrence from Kingston to Quebec, and the southern side of that river from Quebec to Point Gaspé, together with the eastern half of the peninsula which extends from Georgian Bay to Lakes Erie and Ontario: the same formation occupies the right bank of the Ottawa in the lower half of its course. *Devonian* beds cover the western half of the peninsula now mentioned; while the *Carboniferous* series chiefly occur S. of the St Lawrence, near the frontier of the United States, particularly in the counties of Quebec and Three Rivers.

Minerals.—These comprise iron, lead, copper, tin, gold, silver, limestone, brick-clay, marble, lithographic stones, paving-stones, mill-stones, grinding-stones, &c.

Hitherto it has been held that Canada contains no coal, though some geologists have dissented from that conclusion: should coal-mines of a good quality be discovered, they will greatly tend to enrich this very flourishing colony; and in any case it is of importance to know that immense deposits of that valuable mineral occur in Nova Scotia, New Brunswick, and the adjacent States of the American Union. Rich mines of copper ore have been found on the northern shores of Lake Superior, and near Quebec. Iron exists in several places, and extensive foundries are in active operation near Three Rivers, and at Marmora, County Hastings. Gold has been found near Montreal in sufficient abundance to induce a private company to search for it, and discoveries have been made which have already amply rewarded those engaged in its pursuit.

Botany and Agriculture. — Canada is almost wholly embraced in Schouw's Fourth Phyto-geographic Region. (See under "United States," and at p. 55).

The greater part of Canada is covered by enormous forests, chiefly of white and red pine, the former of which, frequently measuring 100 feet from the ground to the first branch, is exported to the United Kingdom in great quantities. Other forest trees are the ash, birch, beech, elm, maple, lime, elder, willow, cedar, and many others. Wild fruits are numerous, and nearly all the vegetables and fruits of Great Britain arrive at perfection in Upper Canada, under proper cultivation. The flowers are of great beauty and variety, but generally of different species from those indigenous in W. Europe. In the fertility of its soil, and its adaptation to the growth of cereals, Canada yields to no country either in the Old or New World. Upper Canada, especially, is famous for its wheat; a specimen grown near Toronto obtained the first prize at the great Paris Exhibition of 1855. In the valleys of some of the larger rivers, thirty crops of wheat have been raised in immediate succession, the first of which averaged forty bushels per acre, and the last twelve bushels, without the application of manure. In many places the soil has been greatly injured by such constant succession of the same kind of crops; but of late more improved methods of agriculture have largely restored the ground to its original fertility. In 1856, the estimated yield of Upper Canada alone amounted to 20,000,000 bushels. Indian-corn, hops, and tobacco are the common crops, and yield large returns. Hemp and flax are indigenous plants, and can be cultivated to any extent in many parts of the country. Pumpkins and squashes attain gigantic dimensions, sometimes exceeding 250 pounds in weight. In the vicinity of the great lakes, the grape and peach grow with luxuriance, and ripen to perfection in the open air.

Zoology.—Wild animals include the bear, wolf, lynx, wild-cat, fox, beaver, racoon, marten, minks, and musk-rat; but these are rapidly diminishing in numbers. Squirrels are extremely abundant, and eagerly sought after.

Birds consist of wild swans, wild turkeys, ducks, geese, woodcocks, snipes, and many beautiful birds of the smaller feathered tribes; besides eagles, kites, hawks, horned owls, herons, bitterns, and crows. Snakes are numerous, but the venomous kinds, which embrace the adder, copper-head, and rattlesnake, are not so plentiful as in the United States. The fisheries on the coasts, lakes, and rivers are highly important.

Ethnography.—The inhabitants of Lower Canada are chiefly of French origin, having been established in the colony previous to its cession to Great Britain in 1761. They speak the French language slightly corrupted, and nearly all profess the Roman Catholic religion.

The French Canadians are generally described as civil, polite, and hospitable; but illiterate, litigious, wanting in energy, averse to all change, and jealous of English rule. They are all in comfortable circumstances, being the proprietors of the land they occupy. Upper Canada is settled principally by emigrants from the British Isles and their descendants. The Irish are very numerous, and next to them the Scotch; but in some localities there are numerous settlements of Germans, and of " loyalists " from the United States, *i.e.* persons who fought on the side of Great Britain during the American war. In Upper Canada the Roman Catholics form about one-sixth of the population, and in Lower Canada about five-sixths. At the general census in 1851 they numbered in both provinces 914,561, or about a half of the whole population In the same year there were belonging to the Church of England, 270,000; Church of Scotland, 75,000; Free Presbyterians, 93,000; other Presbyterians, 83,000; total number of Presbyterians, 250,000; Methodists, 230,000; Baptists, 50,000. The native Indian population does not exceed 40,000, and they all belong to two tribes, the *Chippeways* or Ojibbeways, a section of the great Algonquin-Lenape nation, and the *Mohawks*, a subdivision of the Iroquois. A few of them have embraced Christianity, but the great majority are still heathens.

Education.—Few countries have provided more liberally for general education than Canada.

In 1855 there were in Upper Canada 4 universities, 6 colleges, 65 grammar-schools, 29 private academies, 3325 common schools, and 278 private schools, making in the aggregate 3710 educational institutions, attended by 240,800 pupils and students, and costing £230,000 sterling. In Lower Canada education is in a less advanced state, but the superior schools are of a high order. In 1851, the total number of schools was 2005, and these were attended by 90,000 pupils. In both provinces the press is advancing rapidly; the journals are unstamped, and there is no duty on paper or advertisements. Every town and village in Upper

Canada has its own press, and generally two papers are issued in each. Montreal publishes about twenty newspapers. In periodical literature little progress has been made, not more than half-a-dozen Magazines being published in the country. The principal cities have natural history societies, astronomical clubs, lyceums, public libraries, and mechanics' institutes.

Government, &c.—Canada was acquired by the British in 1761; in 1791 the laws of England were introduced into Upper Canada, where they continue to the present time, subject to the various alterations made by the local Parliament. The laws of France, as they existed when the country was ceded to Britain, prevail in the lower province, subject to the same alterations; but the criminal and commercial laws of England prevail in both provinces. In 1841 the two provinces were united under the administration of a governor-general, a legislative council of not less than 22 members elected by the Crown, and a legislative assembly of 42 members from each province, elected by the people. The Imperial Government rarely interferes, except when some great national interest is involved.

The revenue for 1854 amounted to £1,402,079 currency, and was chiefly derived from customs, excise, public works, sale of lands, and bank imposts. The exports for 1855 were valued at £7,047,118, and the imports at £9,021,540 currency. The tonnage employed in the transatlantic commerce of Canada, and with the sister provinces, amounted in the same year to 420,000 tons inwards, and 451,000 tons outwards.

Internal Communication.—The *Canals*, though only 218 miles in aggregate length, are of great capacity, and are very superb works.

That along the St Lawrence, from the tide to Lake Ontario, is about 41 miles in length, in 7 interrupted sections, overcoming impediments in the river. Some of the locks are 200 feet long, 50 feet wide, and 10 feet deep. The Rideau Canal, from Lake Ontario to Ottawa City, a distance of 135 miles, carries vessels of 120 tons burden. The Welland Canal, from the S.W. of Lake Ontario to Port Maitland on Lake Erie, a distance of 42 miles, allows vessels of 125 tons to pass from the one lake to the other, thus avoiding the insuperable Falls of Niagara.

The Railways are on a grand scale, and some of their viaduct bridges are among the most stupendous in the world. Such are the Victoria Tubular Bridge across the St Lawrence, near Montreal, 7000 feet long, which cost about two million pounds sterling, and the Great Suspension-Bridge over the Niagara River, below the Falls. The colonial Government assists in the construction of railways. In 1836 there were not 20 miles of railway constructed: there are now actually completed within the colony 1612 miles, besides those in course of construction. The principal lines were the Grand-Trunk Railway, which commences at St Thomas, 80 miles below Quebec, passes that city, then proceeds S.W. to Richmond (about 40 miles inland), where it meets the Portland and Montreal Railway, crosses the St Lawrence at Montreal, and then pursues its course westward to Kingston, thence to Toronto, and Port Sarnia, at the S. extremity of Lake Huron, being a total distance of 856 miles. The next important railway is the Great Western, which runs from Toronto through Hamilton and London to Windsor, opposite Detroit, whence a line extends to Chicago: a branch line connects Hamilton with the Niagara, 2 miles below the celebrated falls. From Toronto, the Ontario and Huron Railway proceeds N.W. to Collingwood on Georgian Bay, a distance of 96 miles. Another line, 160 miles in length, crosses the Grand Trunk at Stratford, and the Great Western at Paris, and connects Goderich, on Lake Huron, with Buffalo in the State of New York.

THE LOWER PROVINCES AND NEWFOUNDLAND.

Boundaries.—The Lower Provinces of British North America, comprising New Brunswick and Nova Scotia on the mainland, and the islands Cape Breton and Prince Edward in the Gulf of St Lawrence, are bounded on the N. by Canada and the Gulf of St Lawrence; on the W. by the State of Maine and the Bay of Fundy; and on the S. and S.E. by the Atlantic. Newfoundland is separated from the Lower Provinces by the Gulf of St Lawrence; from Labrador, by the Strait of Belleisle, 12 miles wide; and is bounded by the Atlantic on the S. and E. Lat., 43° 35′—51° 37′ N.; lon., 52° 25′—67° 53′ W.

Halifax, the capital of Nova Scotia, lies nearly on the same parallel as Kingston and Oregon City in the New World, and as Lyon, Venice, Belgrade, Sevastopol, Sea of Aral, and Kirin Oula, in the Old World; and nearly on the same meridian as Nain in Labrador, the Bermudas, Trinidad, Chuquisaca, and the Falkland Islands.

Area, Population, and Political Divisions.—The area and population of the different political divisions are as follow:—

PROVINCES.	Counties.	Area in Square Miles.	Population.
New Brunswick, . .	14	27,700	194,000
Nova Scotia, . . .	10	17,846	276,177
Cape Breton, . . .	3	3,120	35,000
Prince Edward Isle, . .	3	2,134	62,678
Newfoundland, . . .		36,000	100,000
Totals, . . .		86,800	669,855

The area of the whole is nearly equal to that of Great Britain, while the population is only two-thirds that of Wales. The cities and towns, of which the following are the principal, are neither numerous nor large.

NEW BRUNSWICK.—Fredericton 6, St John 21 (St John's River), St Andrews 7 (St Croix), Chatham, Newcastle (Miramichi), Bathurst (Bay of Chaleurs).

NOVA SCOTIA.—Halifax 25, Lunenburg 2, Liverpool 2 (S.W. coast), Yarmouth, Annapolis (Bay of Fundy), Windsor (Minas Bay), Pictou 5, New Glasgow (Northd. Str.)

CAPE BRETON.—Sydney 1 (Sydney Harbour or Spanish Bay).

PRINCE EDWARD ISLAND.—Charlotte Town 4 (Hillsborough Bay). George Town (E. coast.)

NEWFOUNDLAND.—St John's 25 (S.E. coast).

Notes on Towns.—*Fredericton*, formerly St Ann's, though much inferior to St John's, is the seat of the provincial assembly, as also of King's College—an establishment supported by an annual government grant of £2000. The town has considerable trade in timber, which is floated down in rafts to St John, and then exported to Great Britain and other countries. *St John*, the commercial capital and the largest city in the province, situated on the N. side of the estuary of the St John river, has a fine harbour, which is open at all seasons, and defended by several forts. It is the entrepôt of a wide extent of country, possesses valuable fisheries, and exports timber, fish, furs, and lime, in large quantities. The other towns are small, and all engaged in the lumber trade. HALIFAX, the capital of Nova Scotia, and the most important city in the Lower Provinces, is built of wood, and beautifully situated on a narrow arm of the sea leading up to Bedford Basin, one of the finest harbours in the world. It is the principal station of the British army and navy in North America, and is well defended by strong forts and batteries. It contains the residences of the governor, the admiral, and the military commandant, two colleges, and Province Building—one of the finest edifices in British America, erected for the accommodation of the Government offices—and public library. Halifax is the nearest port to Great Britain on the American continent; and a railway, projected from it to Quebec through the centre of New Brunswick, will bring that city within twelve days' journey of Liverpool, with which there is regular steam communication. *Lunenburg* and *Liverpool*, though small, are important for their fine harbours, fisheries, and flourishing trade. *Windsor*, a small town, charmingly situated on Minas Bay, contains an Episcopal college. *Pictou*, the principal town on the Gulf of St Lawrence, has an excellent harbour and considerable trade: near it, *New Glasgow*, a thriving village, with valuable coal-mines. *Charlotte-Town*, the capital of Prince Edward Island, has a magnificent harbour, and enjoys great commercial facilities. *Sydney* has an extensive bed of bituminous coal in the vicinity. *St John's*, capital of Newfoundland, stands on a spacious and secure harbour defended by several forts; it is much resorted to during the fishing season, when upwards of 120 vessels, with an aggregate tonnage of about 11,000 tons, are employed in the capture of seals. In 1846 it was almost wholly destroyed by fire, but it has since been rebuilt and much improved. It is the only town of importance on the island.

Capes.—Sable, the S.W. extremity of Nova Scotia; Canso,* its E. extremity; Breton, the most E. extremity of the island of same name; St Lawrence and North, the northernmost points of that island; East Cape, the N.E., and North Cape, the N.W. extremities of Prince Edward Island; Ray, Race, and Bauld, the S.W., the S.E., and N. extremities, respectively, of Newfoundland.

Islands.—Grand Menan, at the mouth of Bay of Fundy; Sable, 90 miles S.E. of Cape Canso; Miquelon and St Pierre, S. of Newfoundland. †

Gulfs, Bays, and Straits.—Gulf of St Lawrence, between New Brunswick and Newfoundland; Bay of Chaleurs, between New Brunswick and Lower Canada; Miramichi Bay, E. of New Brunswick; Northumberland Strait, separating Prince Edward Island from New Brunswick and Nova Scotia; Bay of Fundy, ‡ between New Brunswick and Nova Scotia; Chignecto Bay and Minas Bay, the two E. extremities of Bay of Fundy; Mahone Bay, St Margaret's Bay, Halifax Harbour, and Bedford Basin, all on the S. of Nova Scotia; Chedabucto Bay, Gut of Canso, and St George's Bay, between Nova Scotia and Cape Breton; Bras d'Or and Little Bras d'Or, in the centre of Cape Breton; Fortune Bay and Placentia Bay, on the S. side of Newfoundland; Conception Bay, Trinity Bay, and Notre Dame Bay, on its E. side; Strait of Belleisle, between Newfoundland and Labrador.

Surface and Mountains.—There are no mountains of any importance; but a range of heights in the N. of New Brunswick divides the waters flowing into the Gulf of St Lawrence from the affluents of the St John.

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* Noted for the numerous shipwrecks annually occurring on its coasts.

† These islands have been ceded to France, with the stipulation that no fortifications are to be erected on them. They are very serviceable to the French fishermen, many thousands of whom are employed in the cod-fishery.

‡ Noted for its high tides, the rise amounting to from 60 to 70 feet, which sometimes takes place so suddenly that cattle have been swept away from the shores.

The interior of Nova Scotia forms a table-land which is nowhere more than 700 feet above the sea. Cape Breton rises in the N. to an elevation of 1800 feet—the culminating point of these colonies. Prince Edward Island is generally flat. Newfoundland is for the most part rocky and uneven; but two parallel ranges of hills extend in the W. from S. to N., attaining an elevation, it is said, of 1500 feet.

Rivers.—Owing to the numerous deep indentations of the sea, there are few rivers of any magnitude.

The longest is the St John, in New Brunswick, which, after a course of 400 miles, falls into the Bay of Fundy. Other rivers in this province are the St Croix, which flows into Passamaquoddy Bay, and the Ristigouche, flowing into the Bay of Chaleurs. The most important streams in Nova Scotia are the Shubanacadie, falling into Minas Basin, and the Annapolis, into the Bay of Fundy.

Lakes.—The lakes are small but very numerous, especially in Nova Scotia and Newfoundland.

Among the largest are Grand Lake, in New Brunswick, drained by the St Croix; the Rosignol, in the W. of Nova Scotia, drained by the Mersey; and the Grand Pond and Red Indian Pond, in the W. of Newfoundland.

Climate.—The climate of the continental portion is similar to that of Canada; the winters being long and very severe, the summers short and very hot.

In the interior of New Brunswick the climate is thought to be gradually improving, owing to the clearing away of the forests. Fogs are frequent on the S. coast of Nova Scotia. Here also the spring season is cold and tedious; in summer, the rain often falls in torrents, but the autumn is delightful. The annual fall of rain in Nova Scotia is 52 inches, but the province is very healthy. The climate of Prince Edward Island is considerably milder than that of the surrounding colonies. Newfoundland is noted for its humid atmosphere, its dense fogs, and the cold of its winters, when the thermometer frequently falls to 30° below the freezing point.

Geology.—Crystalline and Igneous rocks occupy the greater part of the surface of Newfoundland, Nova Scotia, and the W. part of New Brunswick.

Silurian and *Cambrian* strata prevail in the N.W. of New Brunswick. The *Carboniferous Series* is largely represented in these colonies—the Coal-Measures occupying the immense area lying between the Bay of Chaleurs and the E. extremity of the island of Cape Breton, and penetrating in New Brunswick far into the interior. *Jurassic Red Sandstone* is found largely developed in Nova Scotia along the Bay of Fundy, from Long Island to Cape Blomadon, together with the whole of Prince Edward Island.

Minerals.—The mineral products of the Lower Provinces are abundant and valuable, comprising inexhaustible supplies of ironstone and coal, together with plumbago, copper, manganese, limestone, gypsum, copperas, alum, pipe-clay, red and yellow ochre, salt, writing and roofing slates, granite, sandstone, and other building-stones, grindstones, and millstones. A ledge of gold-bearing quartz was discovered in June 1860 near the head-waters of Tangier River, in Nova Scotia. In 1859 a vein of silver ore was found in Newfoundland, together with rich lodes of lead and of copper pyrites, the latter being as valuable for its sulphur as for its copper.

Botany and Agriculture.—With the exception of Newfoundland, the climate and vegetation of which resemble those of Labrador, the Lower Provinces are wholly embraced within Schouw's Fourth Phyto-geographic Region, the characteristics of which are given under "Canada" and the "United States."

Immense forests cover the greater part of the surface of New Brunswick. The exportation of timber (here called lumber) has hitherto formed the principal source of wealth, and only a small portion of the surface is under cultivation.

Nova Scotia is, for the most part, covered with wood and lake; the trees are less majestic than in New Brunswick, but embrace a great number of species, as the maple, poplar, American elm, beech, ash, birch, larch, oak, hemlock, and various pines. In 1851, about 800,000 acres were under cultivation, besides 40,000 acres of dyked land, chiefly along the Bay of Fundy. The soil is very fertile: the principal crops are wheat, maize, barley, rye, oats, potatoes, buckwheat, and field pease. The wheat crop often suffers from weavil, and the province does not, even in good seasons, supply its own population with bread. The orchards of the W. counties are very productive; apples and cider are largely exported, and considerable quantities of sugar are obtained from the maple tree. Cape Breton and Prince Edward Island were till recently covered with primeval forests; but now 90,000 acres in the former, and 215,000 in the latter, are under cultivation. The crops resemble those of Nova Scotia. The soil of Newfoundland is marshy, and covered with a scrubby vegetation. The island is very destitute of timber: kitchen vegetables form the principal crops, but some of the cereals are found to thrive well in favoured localities.

Zoology.—Wild animals comprise the moose-deer, bear, tiger-cat, fox, marten, otter, minks, beaver, musk-rat, porcupine, racoon, weasel, squirrel, and hare, all of which, except the two last, have decreased very rapidly in number.

The wolf and wild-dog are also found in Newfoundland, but the pure breed of the Newfoundland dog is now rarely met with. Domestic animals comprise cattle and sheep, which in Nova Scotia are very numerous, together with swine, horses, and poultry. The feathered tribes, often beautiful, are all destitute of song. The seas, bays, and rivers, literally swarm with fish of almost every name; and the celebrated "bank of Newfoundland," which forms the most extensive submarine elevation on the globe, is tenanted by immense shoals of capelin and lance, which attract the larger species—the cod and whale. The cod-fishing, the largest in the world, opens at the beginning of June, and lasts till about the middle of October. In 1851, the value of the dried fish was £493,014; of the oil, £319,000; seal-skins, £76,596; salmon, £12,024; herrings, £18,261—total exports, £959,751. In addition to the colonists of Newfoundland, a great number of French, Americans, and English are engaged in these fisheries.

Ethnography.—The population consists for the most part of emigrants from the United Kingdom, and their descendants.

French Acadians, or the descendants of French colonists, who settled here before the country came under British authority, are numerous in some localities, as along the Bay of Chaleurs, and in Cape Breton; a considerable number of Germans are found in other places, especially at Lunenburg; free negroes in the vicinity of Halifax, about 2000 in number; and a few aborigines, who are all Micmacs. The Irish and the French Acadians are nearly all Roman Catholics. In Nova Scotia alone this sect numbered 69,634 in 1851; the remainder of the population are Protestants, and nearly equally divided among Presbyterians, Episcopalians, Baptists, and Methodists. The two largest Presbyterian bodies in Nova Scotia—viz. the Free Church of Nova Scotia, with 33 ordained ministers, and the Presbyterian Church of Nova Scotia, with 40 ordained ministers—were united into one body in October 1860. The education of the people is everywhere carefully attended to; there are colleges at Fredericton, Halifax, and Windsor, grammar-schools in all the cities and towns, while the elementary schools are numerous in all the provinces. The English language prevails everywhere. French is understood by many besides the Acadians, while in certain localities Irish, Gaelic, and German may be heard.

Government, &c.—The form of government is nearly the same in all the provinces, each colony having a Lieutenant-Governor appointed by the Crown, assisted by a Council, also nominated by the Crown, and a House of Assembly, the members of which are elected by the people.

Cape Breton forms a colony under the Government of Nova Scotia, and sends two members to its House of Assembly. The following table exhibits the amount of Public Revenue, with the Exports and Imports of the various provinces, for 1851:—

	Revenue in 1851.	Exports.	Imports.
New Brunswick, . .	£138,220	£965,000	£1,225,000
Nova Scotia and C. Breton,	100,636	431,546	746,748
Prince Edward Island, .	22,538	71,226	143,654
Newfoundland, . .	82,632	959,751	943,191
Totals, . . .	£344,026	£2,327,523	£3,058,593

Customs form the principal source of revenue: the exports are chiefly timber, salted fish, coal, gypsum, bark, and oil; while the imports consist principally of corn, tobacco, tea, sugar, cotton and woollen cloths, beef, pork, beer, books, brass and copper manufactures, gunpowder, medicines, soap, wines, spirits, &c.

Internal Communication.—The following lines of railways were open in February 1859:—Halifax, N.W. to Windsor, 32 miles; Halifax, N.E. to Truro, 60 miles; St Andrews (N.B.) to Woodstock, 65 miles; St John's (N.B.) to Shediac, opened at both ends for about 30 miles, and the middle portion to be finished in 1861. Fraserville (formerly called Rivière du Loup), on the St Lawrence, 110 miles below Quebec, is the point of junction fixed on for the great lines of railway between St Andrews and Quebec.

THE UNITED STATES.

Boundaries.—N., Canada and the Hudson Bay Territory, from which it is separated by the great lakes and the 49th parallel of latitude; W., the Pacific Ocean, from Cape Flattery to San Diego; S., the Mexican Republic, the Gulf of Mexico, and Strait of Florida; E., the Atlantic Ocean and New Brunswick.

The United States extend from lat. 25° (Cape Sable) to 49° N., and from lon. 66° 48′ (River St Croix) to 125° W., and thus embrace 24° of lat. and 58° of lon. While the lat. of its northern boundary corresponds with that of Cherbourg, its southern limit is on the same parallel with the centre of the Sahara; and the parallel of 37°, which passes through the centre, cuts San Francisco and Norfolk in the New World, and Cape St Vincent, Syracuse, Smyrna, Astrabad, Kundooz, and Jeddo, in the Old. The extreme length, from Passamaquoddy Bay to the Pacific, is estimated at 2800 miles, and the extreme breadth, from Red River Settlement to the mouth of the Rio Grande, 1600 miles. The frontier line measures about 10,000 miles, including 5100 of seaboard and 1200 of lake and river coast; but including the sinuosities of the shores, the entire sea-line is about 12,600, or one mile of seaboard to every 235 square miles.

Area.—The area is variously estimated from 2,872,800 to 3,260,000 square miles—the latter estimate making it about five-sixths of the area of Europe, and twenty-five times that of the British Isles. At the treaty of peace in 1783, the area was reckoned at 820,680 square miles, being only about one-fourth of what it is now. The area of the Free States, including the recently formed state of Minnesota, is

754,436 square miles; of the Slave States, 851,508 square miles; and of the Territories, 1,654,000 square miles.

Population.—In 1850 the population was 23,191,876, including 3,204,000 slaves, 427,000 free blacks, and about 300,000 aborigines.

The *estimated* population in 1858, according to the American Almanac, was 27,797,000, or nearly the same as that of the British Isles in 1851. The population has doubled itself during the last twenty-five years, and more than quadrupled itself during the last half-century. This unparalleled increase is mainly owing to the constant stream of immigrants from Europe, and especially from the United Kingdom. The total number of emigrants that arrived at the various ports of the United States between the years 1844 and 1858 was 3,907,018. In 1854 alone the number was nearly half a million. The N.E. States, from Massachusetts to Maryland, are the most densely peopled portions, being those first settled. The population of the Free States and territories, at the last census, was 13,527,220, and of the Slave States, 9,664,656.

Political Divisions.—At present* there are 32 States, 6 organised territories, 1 undivided Indian territory, and 1 federal district (Columbia)—in all, 40 political divisions, with an average area of 75,000 square miles, or five-sixths the size of Great Britain, and an average population of 580,000, or less than eight persons to each square mile.

There are seventeen Free States, all of which, with the exception of California, are situated in the N.E., extending from the Atlantic to the Missouri, and from the great lakes to the Ohio. The Slave States occupy the S.E., extending from the Ohio to the Gulf of Mexico, and from the Atlantic to the frontiers of Mexico, and, including the slave-holding district of Columbia, are sixteen in number. The territories, now only six in number, embrace one-half of the entire area of the Union, and extend from the organised States to the Pacific Ocean, and from the Mexican Republic to British America. The free States are divided by the upper course of the Ohio into North-Eastern and North-Western; and the Slave States are, in like manner, divided by the lower course of the Mississippi into South-Eastern and South-Western States.

NINE NORTH-EASTERN STATES.†

MAINE.—Augusta 8, Bath 8 (Kennebec), Eastport 5 (Passamaquoddy Bay), Belfast 5, Bangor 15 (Penobscot), Portland 22 (Casco Bay).

NEW HAMPSHIRE.—Concord 9, Nashua 6, Manchester 14 (Merrimac), Portsmouth 10, Dover 8 (Piscataqua), Hanover 2 (Connecticut).

VERMONT.—Montpelier 2, Burlington 8 (Onion R.), St Albans 4 (Lake Champlain), Middleburg 4, Rutland 4 (Otter Creek).

MASSACHUSETTS.—Boston 200, Charleston 17, Cambridge 15, Lynn 14, Salem 23 (Massachusetts Bay), Newbury Port 13, Andover 7, Lawrence 10, Lowell 40 (Merrimac), Plymouth 6 (Cape Cod Bay), New Bedford 20 (Buzzard Bay), Fall River 12, Taunton 10 (Fall River), Worcester 20 (Seehouk), Springfield 12, Northampton 6 (Connecticut).

RHODE ISLAND.—Providence 47, Newport 10, Warwick 8, Bristol 5, Tiverton 5 (Narragansett Bay), Pawtucket 7 (Pawtucket), Smithfield 12 (Blackwater).

CONNECTICUT.—Hartford 22, Middleton 9 (Connecticut), New London 9, Norwich 10 (Thames), Newhaven 23, Bridgeport 8 (Long Island Sound).

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* At the Declaration of Independence, in 1776, there were only thirteen states—viz. Delaware, Pennsylvania, New Jersey, Georgia, Connecticut, Massachusetts, Maryland, South Carolina, New Hampshire, Virginia, New York, North Carolina, and Rhode Island.

† The six States first given are generally called the New England States.

New York.—Albany 51, Brooklyn 97, New York 850, Newburg 12, Poughkeepsie 14, Kingston 10, Catskill 6, Hudson 6, Troy 29 (Hudson), Schenectady 9, Utica 18, Rome 8, Lenox 8 (Mohawk), Plattsburg 6 (Lake Champlain), Oswego 12 (Lake Ontario), Rochester 37 (Genesee), Buffalo 75 (Lake Erie), Geneva 6 (Lake Seneca), Auburn 10 (Lake Owasco), Syracuse 60 (Erie Canal).

New Jersey.—Trenton 7, Camden 10, Burlington 5, Princeton 3, n., Newton 8 n. (Delaware), Newark 39, Paterson 12 (Passiac), New Brunswick 10 (Rariton), Jersey City 11 (Hudson).

Pennsylvania.—Harrisburg 8, York 6, Lancaster 12, n. (Susquehanna), Lebanon 7 (Swatara Creek), Philadelphia 410, Easton 5 (Delaware), Norristown 6, Reading 16, Pottsville 8 (Schuylkill), Pittsburg 110 (Ohio).

EIGHT NORTH-WESTERN STATES.

Ohio.—Columbus 18, Chillicothe 7 (Scioto, *affl.* Ohio), Cincinnati 115, Marietta 5, Steubenville 7 (Ohio), Dayton 11, Springfield 7, n. (Miami), Zanesville 8 (Muskingum), Cleveland 55, Sandusky 10 (Lake Erie), Toledo 15 (Maumee, *affl.* Lake Erie).

Indiana.—Indianapolis 8 (White River, *affl.* Wabash), La Fayette 6, Fort Wayne 6 (Wabash), New Albany 10, Madison 9 (Ohio).

Michigan.—Detroit 40 (Detroit, *affl.* Lake Erie), Lansing, Grand Rapids 3 (Grand River, *affl.* Lake Michigan), Monroe 4, Adrian 3, n. (Raisin River).

Wisconsin.—Madison 2 (Gooskehawa, *affl.* Rock River), Waterton (Rock River), Dover (Wisconsin), Milwaukee 40, Racine 6 (Lake Michigan).

Illinois.—Springfield 5, n. (Sangamon, *affl.* Illinois), Jacksonville, n., Peoria, n. (Illinois), Alton 12, Quincey 7, Nauvoo, Galena 7, n. (Mississippi), Fandalia (Kaskaskia), Rock Island 4 (Rock Island River), Chicago 50, n. (Lake Michigan).

Iowa.—Iowa City 2 (Iowa, *affl.* Mississippi), Keokuk 4, Burlington 5, Musatine 4, Davenport 3, Du Buque 4 (Mississippi).

Minnesota.—St Paul 10, St Anthony, Minneapolis (Mississipi), Stillwater (St Croix).

California.—Sacramento City 15 (Sacramento), Stockton 10, n. (San Joaquin), Marysville 8 (Yuba, *affl.* Sacramento), San Francisco 60, San José 4, n. (San Francisco Bay), Benecia 5 (Karquenas Strait), Monterey, San Diego (W. coast).

TWELVE SOUTH-EASTERN STATES.

Delaware.—Dover 4, n., Milford 6 (Delaware Bay), Newcastle 4, Wilmington 16, n. (Delaware), Newark 4 (Christiana Creek).

Maryland.—Annapolis 3 (Severn), Baltimore 170 (Patapsco), Frederick City 6, n., Cumberland 6 (Potomac).

District of Columbia.—Washington 40, Georgetown 8 (Potomac).

Virginia.—Richmond 28, Lynchburg 7 (James River), Petersburg 14 (Appomattox, *affl.* James River), Norfolk 115, Portsmouth 7 (Elizabeth River), Alexandria 9 (Potomac), Fredericksburg (Rappahannock), Wheeling 11 (Ohio).

North Carolina.—Raleigh 5, n., Newbern 5 (Neuse River), Wilmington 11, Fayetteville 5 (Cape Fear River), Beaufort (S.E. coast), Charlotte (Wateree, *affl.* Santee).

South Carolina.—Columbia 6 (Congaree, *affl.* Santee), Camden

(Wateree), Georgetown 3 (Great Pedee), Charleston 43 (*confl.* Cooper and Ashley), Hamburg (Savannah).

GEORGIA.—Milledgeville 4 (Oconee, branch of Altamaha), Macon 5 (Ocmulgee, branch of Altamaha), Savannah 24, Augusta 6 (Savannah), Fort Gaines, Columbus 6 (Chatahoochee).

FLORIDA.—Tallahassee 2, n. (Ocklokonee), St Mark's or Port Leon (Appalachee Bay), Appalachicola (Appalachicola River), Pensacola 2 (N.W. coast), St Augustine 3 (N.E. coast), Key West (Pine Islands).

ALABAMA.—Montgomery 5, Mobile 21 (Alabama), St Stephen's (Tombigby), Tuscaloosa 3 (Black Warrior, *affl.* Tombigby), Wetumpka 4 (Coosa, *affl.* Alabama), Eufala (Chattahoochee), Florence (Tennessee).

MISSISSIPPI.—Jackson 3 (Pearl River), Columbus 3 (Tombigby), Natchez 5, Vicksburg 4 (Mississippi).

TENNESSEE.—Nashville 20 (Cumberland, *affl.* Ohio), Memphis 9 (Mississippi).

KENTUCKY. — Frankfort 4, Lexington 9, n. (Kentucky, *affl.* Ohio), Louisville 43, Covington 10 (Ohio).

FOUR SOUTH-WESTERN STATES.

MISSOURI.—Jefferson City 3, St Charles 3, Franklin, Independence (Missouri), St Geneviève, St Louis 78, Hannibal (Mississippi).

ARKANSAS.—Little Rock 5, Van Buren 3 (Arkansas), Batesville (White River, *affl.* Arkansas), Helena, Columbia (Mississippi).

LOUISIANA.—Baton Rouge 4, New Orleans 145 (Mississippi), Alexandria, Natchitoches (Red River).

TEXAS.—Austin 4 (Colorado), Galveston 6 (Gulf of Mexico), Houston 3 (Buffalo), San Antonio de Bexer (San Antonio), Brownsville (Rio Grande del Norte).

SEVEN TERRITORIES.

NEBRASKA.—Fort Union (*confl.* Missouri and Yellowstone), Fort Laramie (N. fork of Platte or Nebraska).

WASHINGTON.—Olympia (Puget Sound), Pacific City, Fort Vancouver, Fort Walawala (Columbia).

OREGON.—Salem, Portland, Oregon City, Marysville (Willamette, *affl.* Columbia), Astoria or Fort George (Columbia).

UTAH.—Great Salt Lake City 12 (Jordan), Fillmore City, n. (Sevier), Cedar City (Coal Creek).

NEW MEXICO.—Santa Fé 7 (Santa Fé, *affl.* Rio Grande del Norte).

KANSAS.—Lecompton, Fort Riley (Kansas, *affl.* Missouri), Fort Leavenworth (Missouri).

INDIAN TERRITORY.—Fort Washita, Fort Arbuckle (Little Washita, *affl.* Red River).

Descriptive Notes.—NORTH-EASTERN STATES.—*Augusta*, the capital of Maine, on the Kennebec, a small town, with a United States arsenal, and steamboat communication with the principal ports of New England. *Bangor*, on the Penobscot, 60 miles from its mouth, is said to be one of the most extensive lumber depôts in the world. *Portland*, the most populous and commercial city in Maine, maintains an active commerce with Europe and the West Indies. *Concord*, on the route between Boston and Canada, is the centre of several railways, and a place of considerable trade. *Manchester*, the most important town in New Hampshire, is noted for its manufactures. *Portsmouth*, near the mouth of the Piscataqua, is the only seaport in the State. *Dover*, the oldest town in the State, has a navy-yard, and cotton and other manufactures. *Hanover* is the seat of Dartmouth College. *Boston*, the great literary and commercial metropolis of New England, and the third city in the United States in regard to population, derives its name from the fact that its founders came from Boston, in Lincolnshire. The streets are narrow and irregular; the houses are principally of brick, but the public buildings are of granite. The city consists of three parts,—Boston proper, East Boston, and South Boston,—and contains several populous suburbs, the principal of which are Charlestown, Dorchester, and Cambridge. Here commenced the struggle for national independence in 1773. Faneuil Hall, where so many patriotic meetings were held during the war of independence, is styled the Cradle of Liberty; and Bunker's Hill, in the suburb of Charlestown, is the scene of a celebrated battle, fought in June 1775, between the American troops and the royalist forces. Benjamin Franklin was born here in 1706: the inhabitants are distinguished for the successful cultivation of science and literature; and in Cambridge, one of the suburbs, stands Harvard University, the oldest and best-endowed seminary in the Union. *Lynn*, much frequented by sea-bathers, and noted for its manufacture of shoes. *Salem*, a place of great trade, especially with the East Indies, contains a valuable museum. *Andover*, the seat of the Andover Theological Seminary. *Lowell*, called the Manchester of America, from the number and variety of its manufactures, the chief of which is cotton. In 1850 there were forty mills in operation, producing 120,000,000 yards of cloth per annum. Here are several newspapers, and one well-conducted magazine, the sole contributors to which are the young women employed at the factories. *Plymouth*, a small seaport town, and the oldest in New England, being the place at which the "Pilgrim Fathers" arrived in the "Mayflower," November 1620. *New Bedford*, more extensively engaged in the whale-fishery than any other town in the United States. *Worcester*, one of the handsomest towns of New England, and a great commercial thoroughfare, contains the Hall of the American Antiquarian Society. *Providence*, capital of Rhode Island, and in size the second city in New England, is distinguished for its literary and educational establishments, amongst which is Brown University, which, in 1853, had nine professors and 1496 students. The city is largely engaged in commerce, and its manufactures are extensive. *Newport*, one of the most celebrated watering-places in New England. *Hartford*, the semi-capital of Connecticut, is actively engaged in commerce and manufactures, and contains an Episcopal College. *New Haven*, the other semi-capital of the State, and one of the handsomest cities in the Union, is the seat of Yale College, which, in 1850, had 432 students, a library of 51,000 volumes, and the finest mineralogical cabinet in the United States. *Albany*, a large, thriving city, most advantageously situated both for foreign commerce and inland trade, being connected by railway with Boston, Buffalo, and other important places; by canal with Lakes Erie, Ontario, and Champlain; and, by the river, with New York and the Atlantic. The Erie Canal, from Albany to Buffalo, 363 miles long, was constructed at an expense of upwards of £2,000,000 sterling. The Albany University is the principal educational establishment of the United States. *Brooklyn*, at the western extremity of Long Island, opposite New York, of which it may be regarded as a suburb, contains the United States navy-yard, 40 acres in extent, and a large quantity of military stores. The Atlantic Dock, the most extensive in the Union, admits ships of the largest size. This part of Long Island was the seat of the revolutionary war, and here the British defeated the Americans in 1776. *New York*, the largest and most populous city of the United States, and the chief commercial emporium of the New World, is situated on Manhattan island, at the confluence of the Hudson and East River. The city is triangular in form, and nine miles in circumference; is traversed by regular and handsome streets, the largest of which is Broadway, nearly four miles long, lined with shops and hotels, one of the latter containing 390 apartments. The City Hall, 216 feet long by 105 wide, is built of white marble, and cost half a million of dollars. There are 254 churches and several colleges, among which may be mentioned the University of the City of New York, the College of Physicians and Surgeons, and Columbian College. The city is supplied with water by the Croton Aqueduct, 40 miles long, which discharges 35,000,000 gallons per day, and cost 10,500,000 dollars. The harbour, 25 miles in circumference, admits the largest vessels, is crowded with ships from every civilised maritime nation, and is defended by four strong batteries. In 1852 the exports amounted in value to 71,523,000 dollars, and the imports to 127,441,000 dollars, being a full half of the total imports of the United States. New York was founded by the Dutch in 1621, was the seat of the first American Congress in 1785, and of the inauguration of Washington, the first President of the United States, in 1789. *Troy*, a thriving town on both sides of the Hudson, has an active trade with New York, and various flourishing manufactures, especially in iron, machinery, and hardware, and a large United States arsenal. *Buffalo*, at the north-west extremity of Lake Erie, where it contracts into the Niagara River, is the great entrepôt between the north-west and the Atlantic seaboard, and one of the most thriving cities in the Union, especially since the opening of the Erie Canal. *Syracuse*, on the Erie Canal, is noted for its valuable salt-springs, and for being the seat of the most extensive salt-manufacture in the United States. *Trenton*, a thriving little town, busily engaged in various manufactures. Here General Washington defeated the British troops, 25th December 1776. *Princeton*, the seat of the New Jersey College. *Newark*, the largest and most populous city in the State, has numerous public institutions. *Harrisburg*, on the Susquehannah, here crossed by a covered railway bridge, 2876 feet long. *Philadelphia*, at the confluence of the Delaware and Schuylkill, was formerly the capital of the United States, and is still the second city in the Union in regard to population and importance. It is a handsome city, with the streets regularly laid out and shaded with trees: the public buildings are numerous, and many of them built of white marble; while the benevolent, religious, and literary institutions are very numerous. Philadelphia is the principal seat of the Quaker population of the United States; it was founded by William Penn in 1682; and in the Old State House the independence of the Union was declared in 1776. The Philadelphia Museum is considered the best in the United States. *Pittsburg*, at the junction of two streams which form the Ohio, and in the midst of valuable coal-mines, is the chief seat of the iron manufacture, and is hence called the Birmingham of Amercia. Shipbuilding is extensively carried on, and here is manufactured most of the machinery of the steamboats that ply on the Mississippi.

North-Western States.—*Columbus*, capital of Ohio, is a place of considerable trade. *Cincinnati* the most populous city of the N. W. States, is admirably situated in regard to commercial facilities, and carries on an immense traffic by means of its river, canal, and railway communications: it is also distinguished for its literary and benevolent institutions. In the year 1800 it had only 750 inhabitants. Vineyards are extensively cultivated in the vicinity. It is the largest pork-market in America, and thousands of unowned pigs roam about the streets at all hours of the day. *Cleveland*, including Ohio City, is the great northern commercial emporium of the State. *Detroit*, the commercial emporium of Michigan, is largely engaged in commerce and shipbuilding; has large iron and brass foundries, and is the landing-place of hosts of emigrants from Europe. *Milwaukee*, the commercial mart of a rich and improving country, is noted for the superior quality of the bricks manufactured there. *Nauvoo*, the former abode of the Mormons before they proceeded to Utah. *Galena*, an important mining town, derives its name from the *lead ore* obtained in the neighbourhood in large quantities: the copper-mines are also very rich and valuable. *Chicago*, the great shipping depôt of an immense fertile region, is rapidly growing into a large and populous city. *Iowa City*, on the left bank of the Iowa, which is navigable to this place. *Du Buque*, the central depôt of the great mineral region of Iowa, ships immense quantities of lead. The lead region, partly in this State and partly in Illinois, embraces an area of 2880 square miles. Here zinc, iron, and marble are also met with. *St Paul*, capital of the newly-formed State of Minnesota, at the head of the navigation of the Mississippi, and 14 miles below the celebrated Falls of St Anthony, is rapidly rising into importance. *Sacramento City*, at the confluence of the Sacramento and American rivers, is fast rising into importance, owing to its vicinity to the gold regions. *Stockton*, the depôt for the supply of all the southern mines. *Marysville*, a place of resort for the miners during the rainy season. *San Francisco*, the commercial metropolis of California, inside of the narrow strait called the Golden Gate, is built of wood and brick, is well laid out with the streets crossing at right angles, but has been nearly destroyed by fire on several occasions. The quantity of gold shipped in 1853 was nearly fifty million dollars.

South-Eastern States.—*Wilmington*, at the confluence of the Brandywine and Christiana Creek, and the most important town in the State of Delaware, is well built, contains several excellent academies, a United States arsenal, and numerous manufacturing establishments. Here took place an engagement in 1777, between the United States army under Washington, and the British army under Lord Howe. *Baltimore*, by far the most populous and important city in the south-eastern States, is a very handsome place, ornamented with numerous monuments, one of which is an elegant obelisk commemorative of the defence of the city against the British forces in 1814. Baltimore is the greatest tobacco and flour market in the Union.

WASHINGTON may be regarded as the metropolis of the United States, as it contains the White House, or residence of the President; the Capitol, or seat of the United States' Congress; the Treasury buildings, Patent Office, and other edifices, the joint property of the Confederation. Though many of the public edifices are among the most splendid in the Union, the city wears an unfinished appearance, having been originally planned on a scale of magnitude far beyond that which it has attained. Washington has neither trade nor manufactures, and possesses no importance but that derived from its being the seat of the government. *Georgetown*, three miles farther up the Potomac, is a place of some trade and foreign commerce. *Richmond*, capital of Virginia, on James River, the natural depôt of a large extent of country, exports great quantities of flour, cotton, and tobacco. *Petersburg*, a busy manufacturing town, which largely exports tobacco and flour. *Norfolk*, the chief commercial port of Virginia, maintains steam communication with New York and Philadelphia. *Portsmouth*, noted for its fine harbour, and for its being an important naval depôt of the United States. *Raleigh*, capital of North Carolina, contains an elegant State-house built after the model of the Parthenon at Athens. *Columbia*, capital of South Carolina, on an elevated site overlooking a richly-cultivated cotton and corn growing district, is a very handsome little town, with the streets beautifully ornamented with trees, and is the seat of South Carolina College. *Camden*, celebrated for the battles fought in its vicinity during the War of Independence. *Charleston*, the only important city in the state, contains a population of 60,000 inhabitants, of whom one-fourth are slaves. Many of the houses are beautifully ornamented with verandahs, and surrounded by gardens profusely adorned with orange-trees, magnolias, palmettoes, &c. It has suffered much from fire and the yellow-fever; contains a college, thirty churches, and numerous other public buildings, and exports cotton, rice, and tobacco in large quantities. *Milledgeville*, though a small town, is the centre of a considerable trade. *Macon*, an important cotton mart. *Savannah*, the largest and most commercial town in Georgia, is built of brick, has an excellent harbour defended by two forts, and exports great quantities of cotton and tobacco. *Columbus*, an extensive mart for cotton. *St Augustine*, the oldest town in the United States, was founded by the Spaniards in 1564. *Key West*, a city and port of entry, on an island of same name, commands the entrance to the Gulf of Mexico. *Montgomery*, capital of the state of Alabama, exports large quantities of cotton. *Mobile* (pron. *Mo-bèel*), by far the most important town in the State, and next to New Orleans, the principal port in the Union for its export trade in cotton, was ruined by fire in 1839, but afterwards rebuilt, and greatly improved in appearance. *Tuscaloosa*, the seat of Alabama College, at the head of navigation on the Black Warrior. *Wetumpka*, greatly resorted to for its mineral springs. *Jackson* annually exports about 30,000 bales of cotton. *Natchez* carries on a considerable foreign trade, and is the chief port in the State for the exportation of cotton. *Nashville*, capital of Tennessee, a handsome town on the left bank of the Cumberland, here crossed by a magnificent wire suspension-bridge. Its railway and other facilities render it the seat of an active trade. *Memphis*, on the Mississippi, the most important town between New Orleans and St Louis. *Lexington*, the oldest town in the State of Kentucky, is engaged in cotton, woollen, and paper manufactures, and is the seat of the Transylvania University. *Louisville*, a rapidly increasing and well-built city on the Ohio, immediately above the rapids, which are only perceptible at low water. A canal, 2½ miles in length, has been constructed to obviate the difficulty in the navigation, and now the largest steamers can reach Louisville. The trade is great and the manufactures extensive.

SOUTH-WESTERN STATES.—*St Louis*, a large and rapidly growing city on the right bank of the Mississippi, 1130 miles above New Orleans, is the western depôt of the American Fur Company, and the centre of the overland trade with Mexico; contains many costly public edifices and literary and scientific institutions; is an important military station; and possesses a great transit-trade by the Mississippi, Missouri, Illinois, and Ohio. *Van Buren*, the chief commercial depôt of the State of Arkansas. *New Orleans*, a large and flourishing city on the left bank of the Mississippi, 105 miles above its mouth, and by far the most important in the immense river-basin in which it is situated. It possesses unrivalled advantages for inland trade, and, next to New York, it is the principal commercial entrepôt of the Union. It is the great port for the shipment of cotton, the exports of which in 1852 amounted to nearly one and a half million bales. Tobacco, sugar, flour, corn, lard, and lead, are also exported in enormous quantities. In 1853 the number of ships that cleared for foreign ports was 1115, carrying 544,000 tons; arrived same year, 972 ships, carrying 423,000 tons. The city was founded by the French in 1717; it was purchased by the United States, along with Louisiana, in 1803: the inhabitants are principally of French and Spanish extraction, profess the Roman Catholic religion, and are extremely profligate. *Austin*, capital of Texas, on the Colorado, about 200 miles from its mouth, has only 4000 inhabitants. This State was formerly a member of the Mexican Confederation; was independent from 1836 to 1845, and annexed to the United States in 1846. *Galveston*, the most populous town in the State, is the principal seaport and seat of commerce. The exports mainly consist of cotton, salt, and cattle.

THE TERRITORIES.—As the towns in the territories are for the most part mere villages, we deem it unnecessary to present any description of them here.

Capes.—Cod, E. of Massachusetts; May, S. of New Jersey; Charles, S.E. of Maryland; Hatteras and Lookout, E. of N. Carolina; Sable, S. of Florida; Point Conception and C. Mendocino, W. of California; Blanco, W. of Oregon; Flattery, N.W. of Washington.

Islands.—Nantucket and Martha's Vineyard, S.E. of Massachusetts; Rhode Island, S.E. of State of same name; Long Island (115 miles long by 20 miles broad) and Staten Island, S.W. of New York; Florida Keys, a dangerous chain of islets in the Bahama Channel, S. of Florida.

Gulfs, Bays, and Straits.—Penobscot and Casco Bays, in S. of Maine; Massachusetts and Buzzard's Bays, in E. of Massachusetts; Naraganset Bay, S.E. Rhode Island; Long Island Sound, between Connecticut and Long Island; Delaware Bay, between New Jersey and Delaware; Chesapeake Bay, between Maryland and Virginia; Albemarle and Pimlico Sounds, E. of North Carolina; Gulf of Florida, between Florida and Bahama Islands; Bahama Channel, or Strait of Florida, between Florida and Cuba; Appalachee Bay, N.W. of Florida; Monterey, San Francisco, and Humboldt Bays, W. of California; Strait of Juan de Fuca, Admiralty Inlet, and Puget Sound, N. of Washington Territory.

Mountain System.—See under "North America," p. 577.

Principal River-Basins and Capitals.—See above, at p. 578.

Table of Rivers and Towns.—The annexed table exhibits in detail the river system of the United States, together with the natural position of all the cities and towns above 5000 inhabitants contained in their basins. Of the eighty-four rivers enumerated, thirty-five enter the ocean directly, the remaining forty-nine being their tributaries; while, of the 230 cities and towns, about one-half average from 5000 to 10,000 inhabitants, the remainder being above 10,000. Those below 10,000 inhabitants are distinguished by being printed in *italics*.

1. *Basins inclined to the Atlantic Ocean.*

Rivers.	*Towns.*
Passamaquoddy Bay,	*Eastport.*
Penobscot,	*Belfast*, Bangor.
Kennebec,	*Bath*, AUGUSTA.
Casco Bay,	Portland.
Piscataqua,	Portsmouth, *Dover.*
Merrimac,	Newburyport, *Andover*, Lawrence, Lowell, *Nashua*, Manchester, CONCORD.
Massachusetts Bay,	Salem, Lynn, Charlestown, Cambridge, BOSTON.
Cape Cod Bay,	*Plymouth.*
Buzzard Bay,	New Bedford.
Fall River,	Fall River, Taunton.
Narragansett Bay,	Newport, Warwick, *Bristol*, *Tiverton*, PROVIDENCE.
Blackwater,	Smithfield.
Pawtucket,	*Pawtucket.*
Thames,	*New London*, Norwich.
Connecticut,	*Middleton*, HARTFORD, *Springfield*, *Northampton*, *Hanover.*
Seehouk, l	Worcester.

Rivers.	*Towns.*
Long Island Sound,	Newhaven, *Bridgeport.*
Hudson,	Brooklyn, JerseyCity, New York, Newburg, Poughkeepsie, Kingston, *Catskill*, *Hudson*, ALBANY, Troy.
Passiac,	Newark, Paterson.
Mohawk,	*Schenectady*, Utica. *Rome*, *Lennox*.
Rariton,	New Brunswick.
Delaware Bay,	*Milford*, DOVER, n.
Delaware R.	*Newcastle*, Wilmington, n., Philadelphia, Camden, *Burlington*, TRENTON, *Princeton*, n., *Easton*, *Newton*, n.
Schuylkill,	*Norriston*, Reading, *Pottsville*.
Chesapeake Bay,	ANNAPOLIS, Baltimore.
Patapsco,	Baltimore.
Susquehanna,	York, Lancaster, n., HARRISBURG.
Swatara Creek,	*Lebanon.*

Rivers.	*Towns.*
Potomac,	*Alexandria*, WASHINGTON, *Georgetown*, *Frederick City*, n., *Cumberland*.
Rappahannock,	*Fredericksburg*.
James River,	RICHMOND, *Lynchburg*.
Appomattox,	Petersburg.
Elizabeth R.	Norfolk, *Portsmouth*.
Neuse,	*Newbern*, RALEIGH, n.
Cape Fear R.	Wilmington, *Fayetteville*.
Great Pedee,	*Georgetown*.
Santee and Congaree,	COLUMBIA.
Wateree, *l*.	*Camden*, *Charlotte*.
Cooper and Ashley,	Charleston.
Savannah,	Savannah, *Augusta*, Hamburg.
Altamaha and Oconee,	*Darien*, MILLEDGEVILLE.
Ocmulgee,	*Macon*.
Co. of Florida,	*St Augustine*, *St Lucie*, *St Mark's* or *Port Leon*, *Pensacola*.

2. *Basins inclined to Gulf of Mexico.*

Ocklokonee,	TALLAHASSEE, n.
Appalachicola,	*Appalachicola*.
Chattahoochee,	*Ft. Gaines*, *Eufala*, *Columbus*.
Alabama,	Mobile, MONTGOMERY.
Tombigby,	*St Stephen's*, *Columbus*.
Black Warrior, *l*.	*Tuscaloosa*.
Coosa,	*Wetumpka*.
Pearl,	JACKSON.
Mississippi,	New Orleans, BATON ROUGE, *Natchez*, *Vicksburg*, *Columbia*, *Helena*, *Memphis*, *St Genevieve*, St Louis, Alton, *Hannibal*, *Quincy*, *Keokuk*, *Nauvoo*, *Burlington*, *Musatine*, *Davenport*, *Galena*, n., *Du Buque*, ST PAUL.
Red River,	*Alexandria*, *Natchitoches*.
Arkansas,	LITTLE ROCK, *Van Buren*.
White R., *l*.	*Batesville*.
Ohio, *l*.	New Albany, Louisville, *Maddison*, Cincinnati, Covington, *Marietta*, Wheeling, *Steubenville*, Pittsburg.

Tennessee, *l*.	*Florence*, *Knoxville*.
Cumberland, *l*.	NASHVILLE.
Wabash,	*La Fayette*, *Ft. Wayne*.
White R., *l*.	INDIANAPOLIS.
Kentucky, *l*.	FRANKFORT, *Lexington*, n.
Miami,	Dayton, *Springfield*, n.
Sciota,	*Chillicothe*, COLUMBUS.
Muskingum,	*Zanesville*.
Kaskaskia, *l*.	*Vandalia*.
Missouri,	Alton, *St Charles*, JEFFERSON, *Franklin*, *Independence*, Ft. Leavenworth, *Ft. Mandau*, FT. UNION.
Kansas,	LECOMPTON, *Ft. Riley*.
Nebraska or Platte	*Ft. Laramie*.
Yellowstone,	FT. UNION.
Illinois, *l*.	*Jacksonville*, n., *Peoria*, n.
Sangamon, *l*.	SPRINGFIELD, n.
Iowa,	IOWA CITY.
Rock R., *l*.	*Rock Island*, *Waterton*.
Goosekehawa,	MADISON.
Wisconsin, *l*.	*Dover*.
Co. of Texas,	*Galveston*.
Buffalo,	*Houston*.
Colorado,	AUSTIN.

Rivers.	*Towns.*
Rio Grande del Norte, ...	*Brownsville*, Matamoros, *Revilla*, *Rio Grande*, *Presidio del Norte*, SANTA FE, n.
Sabinas, ...	Santa Rosa, *Coahuila*.
Conchos, ...	*Presidio del Norte*, CHIHUAHUA, n., *SanJosé de Parral*, n.
Rio Florida, .	San Bartolomeo.
Santa Fé, *l*....	SANTA FE.

3. *Basins inclined to the Pacific Ocean.*

Rio Colorado, ...	*Ft. Yuma.*
Gila, *l*.........	No towns.
Rio de Lino, *l*..	Do.
Rio San Juan, *l*.	Do.
Grand River, *l*.	Do.
Co. of California,	*San Diego*, *Monterey*.
San Francisco Bay, ...	San Francisco, *San José*, n., *Benicia*.
Sacramento, ...	SACRAMENTO CITY.
San Joaquin, *l*	Stockton, n.
Yuba, *l*......	*Marysville.*
Columbia, ...	*Astoria*, *Pacific City*, *Ft. Vancouver*, *Ft. Wala - Wala*, *Ft. Okinakane*, *Ft. Colville.*
Willamette, *l*..	*Portland*, *Oregon City*, SALEM, *Marysville.*
Snake R. or LewisFork,	*Ft. Boisée*, *Ft. Hall.*
Puget Sound, ...	OLYMPIA.

Lakes.—The Lakes of the United States are neither numerous nor important, if we except those magnificent fresh-water seas which separate it from Canada, and which we have noticed under that country.

The other principal lakes in the St Lawrence basin are *L. Michigan*, between Michigan and Wisconsin, communicating with L. Huron; *L. Champlain*, between New York and Vermont, drained by the Richelieu, but connected by a canal with the Hudson; and *L. Oneida*, in New York, which discharges its waters into L. Ontario by the river Oswego. The following are the principal lakes in the other great hydrographic basins:—*Moosehead*, in Maine, at the source of the Kennebec; *Okechobee*, in Florida, discharging its surplus waters by the Caloosahatchee into the Gulf of Mexico; *Itasco*, in Minnesota, forming the source of the Mississippi; and *Pontchartrain*, in Louisiana, in the delta of that river. Of those belonging to the great continental basin, or that have no visible outlet, we need only enumerate the *Great Salt Lake*, *Humboldt Lake*, *Pyramid Lake*, *Walker's Lake*, *Sevier Lake*—all in the territory of Utah; and lakes *Tulare*, *Mono*, and *Clear*, in California.

Climate.—The climate of the United States is necessarily very diversified, owing to the vast extent and the great variety of the surface. In general, however, it is *excessive*, being characterised by greater heat in summer and greater cold in winter than other countries of corresponding latitudes.

New York, for example, has the summer of Rome and the winter of Copenhagen; though it is one degree further S. than the former, and 15° further south than the latter. The mean annual temperature, however, is greatly less than in corresponding latitudes in the Old World. Thus, though Philadelphia is nearly one degree S. of Naples, its annual temperature (54°.9) is upwards of 8° lower than that of the latter city. In the North-Eastern states, where the latitude corresponds with that of Northern Italy and the south of France, the winter is so severe for three or four months of the year, that the snow is sufficient for the employment of sledges, and the ice of the rivers strong enough to be crossed by horses and waggons. On the Pacific side, however, the climate is much less rigorous; while, in the states bordering on the Gulf of Mexico, it is almost tropical—the July temperature of New Orleans being 81°, or the same as that of Cairo and Algiers. The annual fall of rain is at New York 36, at Charleston, in South Carolina, 47, and at Marietta, in Ohio, 34 inches. The general average over the states is 37½ inches, but the number of rainy days is smaller than in Europe. The prevailing winds are N.W., S.W., and N.E. The first blows in winter, and, coming from frozen regions, is piercingly cold and dry. The second prevails in summer, especially in the basin of the Mississippi; while the third, coming from the N. Atlantic, is most frequent in the region lying E. of the Alleghanies. In the eastern states consumption is very prevalent, as also severe colds, rheumatism, intermittent fever, ague, ophthalmia, and tic doloreux—diseases, no doubt, originating in the extreme and highly exciting character of the climate, and still more in the great and rapid changes to which it is subject.

Geology.—Much obscurity still attaches to the geology of the United States, owing in part to the vast extent of the area, a large portion of which is still in the wildness of nature, and a still greater portion but thinly peopled; and in part to the comparative paucity of explorers. In so far, however, as this immense territory has been investigated, it appears that, in a geological point of view, it differs very considerably from those portions of the Old World which have received the greatest attention. The sequence of formations is not so complete as in Europe, there being several important geological periods—for example, the Permian, Triassic, and Wealden—that have left no visible monument behind. But, while thus deficient in some members of the series as developed in Europe, it is apparently more full in the subordinate formations of some groups which the two continents possess in common.

Crystalline rocks occur extensively on the Atlantic slope from New Brunswick to Alabama, especially in the New England states, and the eastern half of New York, where they are largely interspersed with granitic rocks: they also cover very extensive areas in Wisconsin and Minnesota; while the great mountain-chains of the country—the Rocky Mountains, the Alleghanies, and the Ozark Mountains—are for the most part built up of them. Silurian strata are supposed to underlie more recent formations throughout the entire basin of the Mississippi, but appear at the surface chiefly in the following localities:—A considerable tract in the state of Maine, extending from the capital to New Brunswick; the western flank of the Alleghanies, along their entire length; an immense circular area of about 130 miles in diameter in the states of Ohio, Indiana, and Kentucky, having for its centre the city Cincinnati; a smaller oblong area in Tennessee on the south side of the river Cumberland; the northern border of New York adjoining Lake Ontario, and extending from the Hudson to the falls of Niagara; and, lastly, an immense tract south of Lake Superior, extending from Lake Michigan and the Canadian frontier to the Missouri. The Devonian system is highly developed, not only in regard to the vast thickness of the strata, and the great extent of country which they cover, but also in regard to the great variety of its organic contents. The most extensive tract of Devonian strata, so far as yet known, is that which is bounded on the North by Lakes Michigan, Huron, and Erie, and on the W., S., and E. by the Illinois, Tennessee, and Hudson respectively. The carboniferous system is also very extensively developed, especially in the eastern states between the Appalachian chain and the 97th meridian, and north of the 34th parallel. The carboniferous limestone, one of its members, occupies, moreover, a wide area in the upper basin of the Missouri, and in the Continental basin, especially in the territories of Nebraska, Washington, Kansas, and Utah. The secondary or mesozoic series, so highly developed in the continent of Europe, is, in America, mainly represented by the cretaceous system, which, with its sands, clays, marls, soft grey limestones, and characteristic greensand, occupies by far the larger part of the western half of the Union, especially between the meridians of 97° and 112°. Tertiary deposits, including the Boulder Clay, prevail chiefly along the three great maritime frontiers—from Long Island to Florida, from Florida to Mexico, and from Lower California to Vancouver Island—and generally extend inland from 100 to 150 miles; but in the lower basin of the Mississippi their width cannot be less than 450 miles. A large portion of the Continental Basin, together with numerous detached tracts in Nebraska, are also covered with tertiary deposits.

Minerals.—The crystalline rocks in many parts of the Union are peculiarly rich in metallic ores. In the Atlantic slope they contain numerous veins of the ores of lead, copper, zinc, iron, and other metals. They also form the matrix of the gold of California and the South Atlantic states, and of the great masses of copper ore, amid the trappean outbursts on the borders of Lake Superior, all of which appear to have been injected during the deposition of the earlier palæozoic strata.

The gold field of California is one of the richest in the world, and yields only to those of Australia. The gold was accidentally discovered in 1848 on the banks of the Sacramento. The value sent to the United States in 1852, was 46,000,000 dollars, besides a large quantity removed privately out of the country. The same region yields also iron, lead, copper, silver, mercury, coal, diamonds, and marble.

Mercury is also found in Kentucky, Ohio, and on the borders of the Great Lakes. Rich lead mines are worked in Illinois, Wisconsin, and Missouri, and yield nearly 14,000 tons annually. Salt abounds in the plateau-region of Utah, as well as in many other parts of the United States, and the salt-springs of New York produce upwards of 5,600,000 dollars' value per annum. In the same state are found, in the early gneiss rocks, magnetic oxide of iron and sulphuret of iron. The Palæozoic rocks, so enormously developed between the Appalachian chain and the river Missouri, are remarkably rich in coal. The principal coal-fields are: (1) The great Appalachian coal-field, extending from Pennsylvania to the Tuscaloosa, in Alabama, embracing an area of 70,000 square miles, and attaining a maximum thickness of 2500 feet. (2.) The coal-field of Michigan, near the centre of that state, and embracing an area of 15,000 square miles. (3.) The great coal-field lying between the Ohio and Mississippi anticlinals, which spreads out in the form of a wide elliptical basin from Kentucky northwards through Indiana and Illinois to Rock River, and contains an area of 50,000 square miles. (4.) The north-west, or Iowa and Missouri coal-field, occupying the immense triangular space which is bounded by the Mississippi, the Missouri, and the Iowa rivers, and containing an estimated area of 57,000 square miles. Coal is also found in Utah, in the Rocky Mountains, in California, and various other localities, but it is doubtful whether it belongs to the Palæozoic series. The united area of all the coal-fields in the United States is estimated at 190,000 square miles, which exceeds twenty-fold all the coal deposits of Europe. There are also numerous and inexhaustible beds of iron-ore, especially in the Alleghanies, and, in 1855, there were 750,000 tons of pig-iron produced.

Botany.—The vegetation of the United States, with the exception of the portion lying W. of the Rocky Mountains, is comprised within Schouw's *fourth* and *fifth* Phyto-geographic Regions.

The former of these, or the *Region of Asters and Solidagos*, extends from the 35th parallel to Lake Winnipeg and St James' Bay, and consequently embraces a large section of British America; but the portion of it contained in the United States is bounded by the parallels of 35° and 49° N., and by the mean annual isotherms of 41° and 59° Fah., having the Atlantic on the E. and the Rocky Mountains on the W. This extensive region is mainly characterised by the great number of species belonging to the genera from which it derives its name; by the great variety of its oaks and pines; by the small number of species belonging to the orders cruciferæ, umbelliferæ, cichoraceæ, and cynarocephalæ; by the total absence of the heath tribe; and by the presence of more numerous species of whortleberry than in Europe. North of lat. 45°, the birch, pine, American elm, willow, and maple, are the principal forest trees. Between this and lat. 35°, the oak, beech, sycamore, acacia, poplar, walnut, and cedar, abound in the uplands, and the cypress and other plants of S. Europe in the plains. In 1848, the number of indigenous flowering plants in this portion of the United States was 1966 species, of which 571 were monocotyledous, and 1395 dicotyledous. The cultivated plants are in general the same as in Great Britain, Central Europe, and Canada, and consist chiefly of wheat, maize, flax, hemp, hops, potatoes, tobacco, the vine, and fruit-trees in great abundance. The region lying between lat. 35° and the gulf of Mexico, and between the Atlantic Ocean and the Rocky Mountains, is termed the *Region of Magnolias*, as it is mainly characterised by plants of this order, so remarkable for their large odoriferous flowers, and for the tonic qualities of their bark. The order includes 65 species, the greater number of which are peculiar to this region, the others being found in the West Indies, Japan, China, and India. Other characteristics of this region are, the frequency of tropical plants, especially of the orders anonaceæ, sapindaceæ, melastomaceæ, cactaceæ, and zingiberaceæ; the comparative fewness of asters and solidagos, and of the orders, labiatæ, caryophyllaceæ, umbelliferæ, cichoraceæ, and geraniæ; and the broad shining leaves of the forest-trees. The mean annual temperature varies from 59° in the N. to 73° in the S. The cultivated plants of this region are chiefly the vine, olive, fig, orange, sugar-cane, cotton, tobacco, rice, wheat, maize, and other grains. The cotton plant is cultivated chiefly in South Carolina, Georgia, and the adjacent states, the total crop, for 1855, being 1,263,000,000 lb., or 2,847,339 bales of 4 cwt. each. Tobacco is grown chiefly in Maryland, Virginia, Kentucky, Tennessee, and North Carolina, the total annual produce being estimated at 2,000,000 cwts. Rice is grown principally in South Carolina, and the sugar-cane in Louisiana, Florida, and Georgia. The culture of the vine has made considerable progress, especially in Ohio, Pennsylvania, and Indiana, where about 140,000 gallons of wine are produced annually; while in many parts the mulberry tree grows spontaneously.

Zoology.—The quadrumana, edentata, and pachydermata, are unknown in the United States; the marsupialia are represented by one species of opossum; the carnivora by numerous species of bats, hedgehogs, and shrews; by bears, racoons, coatis, badgers, and gluttons; by martens, skunks, otters, foxes, and by the puma or cougar, which may be regarded as the lion of the New World; the ruminants embrace the moose-deer or American elk, Virginian deer, antelope, the argali of the Rocky Mountains, and the American bison, which in vast herds roams over the wide prairies of the west; while the rodents include the beaver, musquash, and numerous other species belonging to the squirrel, mouse, porcupine, and hare tribes. The domestic animals, having all been introduced from Europe, require no particular notice.

The birds of the United States are very numerous, and have been ably and beautifully illustrated by Wilson, Audubon, the Prince of Musignano, and others. Among rapacious birds are several eagles, hawks, vultures, and owls; the singing birds are celebrated for their number and variety, as the mocking bird, the wood-thrush, and the Virginian nightingale; while birds of game include the woodcock, partridge, grouse, wild turkey, wild goose, eider-duck, and snipe. Reptiles abound, and belong to every order: tortoises and frogs are especially numerous; the lizards include the alligator or cayman; and the serpents, which are about 40 in number, the deadly rattlesnake. In 1842, the number of known fishes was 440 species, distributed through 156 genera and 32 families: in the state of New York alone there were no fewer than 265 species. The fresh-water fishes, especially in the Ohio, are extremely numerous. The rivers, lakes, and sea-coasts abound with a surprising number of molluscous animals, especially bivalves, among which *Unio purpurescans* is the most richly coloured.

Ethnography.—The people of the United States belong to three great divisions of the human family — Caucasians, Negroes, and American Indians.

The Caucasians, or Whites, who embrace about six-sevenths of the entire population, are mainly of British and Irish extraction; but Germans, Dutch, and French are also numerous. In the New England States, as also in Virginia and the Carolinas, the inhabitants are nearly all of British origin; Dutch and Irish are numerous in the middle States; Germans in the western part of New York, in Pennsylvania, Maryland, Virginia, and in the Western States; French, in Louisiana, Missouri, and Indiana; and Spaniards, in Texas, Florida, and California. The Negro population are of African descent, and number about 3,600,000, eight-ninths of whom are slaves. These now exist exclusively in the South-Eastern and South-Western States, where slavery, with all its hateful concomitants, is still upheld by law; for though the direct importation of slaves is now happily abolished, the number of slaves is rapidly increasing from natural causes. "The slave is not allowed the usual rights of citizenship, is held incompetent as a witness against any member of the white population, is denied the privileges of education, and the right of purchasing his own freedom, even when he has the means." In some of the slave States, as in Virginia, the Carolinas, Georgia, and Alabama, the negroes constitute from a third to a half of the entire population. The Indians, or aborigines, have greatly decreased in numbers since the discovery of America by Europeans at the end of the fifteenth century. They are variously estimated at from 300,000 to 400,000 persons, and are chiefly located in the Indian territory, which Congress has set aside for their permanent residence.

LANGUAGES.—The English language is predominant throughout all parts of the American Union; but foreigners, who at the last census constituted 11 per cent of the entire free population, as well as all the aboriginal tribes, continue to speak their respective native tongues.

EDUCATION is universally diffused, and a larger proportion of the people can read and write than in any other country, whether of the Old or New World.

Immense sums are voted annually for the support of schools and colleges by the legislatures of the different States. "Education is eminently practical, and has nothing speculative in its nature. Primary instruction is gratuitous, but not obligatory. The schools are well furnished and the teachers liberally remunerated. The best educated states are those of New England and New York, where the proportion of the population attending school is equal to that of the best instructed countries of Europe. The higher branches of learning are also assiduously cultivated." High schools and grammar schools are numerous, and there are throughout the Union no fewer than 120 colleges and universities, either for general courses of study or the preparation of particular professions. The oldest of these is Harvard University, Massachusetts, founded in 1636, and possessing the largest library in America.

LITERATURE.—The nation being still in its infancy, its literature is not very extensive. The progress already made, however, in every department of learning, is truly remarkable. Nowhere is science cultivated with greater zeal, and nowhere are its votaries more highly honoured. The quarterly journals, and other periodicals, are numerous, and conducted in general with great ability. The first newspaper published in the country was in 1704, and the second in 1720. When the Revolution began, in 1775, the number had risen to 35; in 1810 there were 359; in 1840, 1631; in 1850, 2526; while at the present moment the number does not fall much short of 4000. The number of copies of newspapers in circulation in 1850 was nearly 427,000,000. Of the many distinguished names that adorn the literature of the United States we can mention only a few examples.

POETRY.—Bryant, Brainard, Dana, Halleck, Hillhouse, Huntingdon, Longfellow, Peabody, Percival, Pierpont, Mrs Sigourney, Whittier, Wilcox, N. P. Willis.

STATESMEN.—John Quincy Adams, Franklin, Hamilton, Jay, Jefferson, Madison, Morris, Trumbull, Washington.

HISTORY.—Bancroft, Bradford, Belknap, Bozman, Brackenridge, Drake, Dunlap, Greenhow, Hale, Hammond, Irving, Motley, Pitkin, Prescott, Quincy, Ramsay, Savage, Schoolcraft, Tracy, Thompson, Waln, Wheaton, Young.

GEOGRAPHY AND TRAVELS.—Baird, Cass, Catlin, H. T. Cheever, Flint, Lewis and Clarke, Morrell, Norman, Olmstead, Parker, Perkins, Pike, Robinson, Roberts, Reynolds, Rockwell, Steven, Silliman, Southgate, Stewart, Tanner, Taylor, Townsend, Warriner.

PHYSICAL SCIENCE.—Audubon, Beck, Bowditch, Browne, Cleaveland, Conrad, Dana, Davis, De Kay, Eaton, Elliott, Espy, Godman, Gould, Asa Gray, Haldeman, Hare, Harlan, Harris, Hitchcock, Holbrook, Jay, Maury, Michaux, Morton, Norton, Nuttall, Olmsted, Pierce, Redfield, Say, Shepard, Silliman, Smith, Torrey, Wallace, Webster, Wilson, Wyatt, H D. Rodgers.

MENTAL AND MORAL SCIENCE.—Adams, Day, Henry, Hickok, Jouffroy, Kauffman, Lieber, Rauch, Schmucker, Tappan, Tucker, Upham, Wayland.

THEOLOGY.—Alexander, Barnes, Beecher, Bush, Channing, G. B. Cheever, Dwight, Jonathan Edwards, B. B. Edwards, Emmons, Hodge, Hopkins, Mason, Payson, Pond, Prime, Skinner, Spring, Stowe, Todd, Woods.

ECCLESIASTICAL HISTORY.—Hawks, Murdock, Pond, Rauch, Rupp.

ORIENTAL LITERATURE. — Bush, Connant, Nordheimer, Robinson, Riggs, Stuart, Turner.

CLASSICAL LITERATURE. — Anthon, Crosby, Felton, Leverett, Sophocles, Woolsey.

ENGLISH LITERATURE AND MISCELLANEOUS.—Abbott, Agnew, Delafield, Drake, Emerson, Forry, Gliddon, Hubbard, Irving, Mather, M'Cauley, M'Culloch, Mellen, Norman, Park, Parker, Sanborn, Smyth, Spring, Tucker, Noah Webster.

ROMANCE.—Allston, Bird, Brown, Cooper, Irving, Miss Sedgwick, Mrs Stowe.

ORATORS.—J. Q. Adams, Everett, Daniel Webster.

RELIGION.—Christianity, in one or other of its forms, is the only religion known in the United States; but the variety of sects is enormous.

The most important sects are the Methodists, Baptists, and Presbyterians, who number about four, three, and two millions respectively. After these rank the Congregationalists, Episcopalians, Roman Catholics, and Lutherans, none of which far exceeds half a million adherents. None of the denominations is endowed by the State—the ministers and churches being supported by the voluntary contributions of the people. As regards the advancement of the Redeemer's kingdom throughout the world, the American churches will bear a favourable comparison with any in Christendom; and there are few heathen countries into which their missionaries have not found their way. In the year 1857 a remarkable revival of religion, which, for duration and magnitude stands without a parallel in the annals of Christianity, manifested itself in New York, and soon spread over all parts of the Union and the British Isles.

Government, Army, and Navy.—The government of the United States is a confederated republic, based on the constitution of 1787; but each state is independent in the management of its internal affairs, and possesses a legislature and executive of its own.

The *general government* is called the Congress, which consists of a president, senate, and House of Representatives, and meets annually at Washington, the capital of the Union, on the first Monday of December. The President is elected for a term of four years. He must be a native-born citizen of not less than thirty-five years of age. He enjoys a salary of 25,000 dollars, with an official residence; and is assisted in the government by a vice-president, chosen in the same manner as himself, and by a cabinet of six ministers of his own selection. He is commander-in-chief of the army and navy, and, with the concurrence of the senate, declares war, makes peace, and appoints ambassadors, judges, and other officers. The present president, James Buchanan of Pennsylvania, who acceded to office on the 4th of March 1847, is the fifteenth individual who has held that high office. The senate consists of 64 members, being two from each State, who are chosen by the legislatures of the different States for a term of six years, one-third of the number retiring biennially. The vice-president, who has a salary of 6000 dollars, is the president of the senate. The House of Representatives consists of one member for every 93,423 inhabitants; the present number being 237. They are chosen biennially by the free citizens of the several States, in all of which the suffrage is universal. Their duties and functions nearly correspond to those of the members of the British House of Commons. Every senator and representative receives eight dollars a-day during the period of his attendance in Congress, besides his travelling expenses. No bill becomes a law until passed by both houses and approved by the President. The president may also veto any act of Congress; but it may yet become law if re-enacted by two-thirds of both Houses. The 35th Congress opened its sittings on the 7th December 1857. Each of the territories enjoys the privilege of sending one delegate to Congress, who has a right to speak, but not to vote.

In 1857 the regular army consisted of only 12,688 men, including officers; but the aggregate militia force of the Union amounted in the same year to the enormous number of 2,071,249 men, and 54,109 officers. The navy consisted of 73 armed vessels, carrying 2323 guns, embracing 10 line-of-battle ships, 13 frigates, 19 sloops, 19 war-steamers, and 12 smaller vessels.

Revenue, Expenditure, and Public Debt.—The Public Revenue in 1857 amounted to 88,532,839 dollars or £18,444,000 sterling—one pound sterling being equal to 4 dollars and 80 cents. The chief sources of revenue are taxes and sales of land. The Expenditure amounted in the same year to 70,822,724 dollars, of which 31,987,000 were for the army and navy. The Public or Federal Debt at 8th December 1857 was 25,165,154 dollars; but the aggregate debts of the different States amounted to 287,292,000 dollars additional.

Commerce, Exports, and Imports.—Owing to the deep indentations of the eastern coast, the numerous navigable rivers of the interior, the magnificent lakes that skirt the northern frontier, and the vast net-work of railways which is spread over the country, the commercial facilities of the United States stand, perhaps, unrivalled among the nations, while the actual extent of its trade is second only to that of Britain. The foreign trade, though shared in by all the States, is principally confined to the nine North-Eastern States, among which New York and Massachusetts stand pre-eminent.

For the three years ending June 30, 1857, the *Imports* amounted in value to 261 million, 314 million, and 360 million dollars respectively; while for the same years the *Exports* were valued at 246 million, 326 million, and 362 million dollars respectively. One half of the imports for 1856 were from the British Empire, and consisted chiefly of manufactured goods from England; the other principal imports were tea, sugar, molasses, coffee, and other tropical produce, besides wines, spirits, dried fruits, hides, and an immense variety of minor articles. Two-thirds of the exports for the same year were to Great Britain and her colonies. In order of importance the exports rank as follows: cotton, bullion, breadstuffs, provisions, tobacco, cotton fabrics, timber, and rice. Cotton is by far the most important article exported from the United States, and forms nearly a third of the total value. In 1855 no less than 1,008,000,000 lbs., or four-fifths of the entire crop, were exported to foreign countries, the gross value of which was 88 million dollars; and two-thirds of the whole were sent to the English market. The specie and bullion in the same year amounted to 56,000,000, the breadstuffs and provisions to 38,000,000, and the tobacco to 14,700,000 dollars. The number of merchant vessels that entered in 1856 was 21,682, carrying 6,872,254 tons; and the number that cleared 21,778 ships, with an aggregate burthen of 7,000,473 tons. The coasting trade is very extensive; the cod and whale fisheries are actively prosecuted, while a vast number of steamers and other craft are constantly plying the navigable rivers of the interior, and the huge lakes that indent the northern frontier. The great commercial ports are New York, Boston, Philadelphia, Baltimore, Charleston, New Orleans, and San Francisco.

Internal Communication.—In no other country in the world has railway communication been so gigantically developed as in the United States.

The vast area extending from the Missouri to the Atlantic seaboard, and from the Ohio to the great lakes, is covered with one unbroken network of railway lines. They are less numerous in the slave-holding States—the principal lines being in Georgia and the two Carolinas; and scarcely exist farther west than the Mississippi and Missouri. In 1856 the number of miles completed was 20,000, unfinished 16,000—making together no less than 36,000 miles. The estimated total cost will be 1,000,000,000 dollars, the annual receipts are 91,000,000, the working expenses 48,000,000, and the net income 42,000,000 dollars. The number of passengers annually conveyed exceeds 61,000,000, besides goods amounting to 122,000,000 tons.

MEXICO.

THE MEXICAN CONFEDERATION.

Boundaries.—N., Texas, New Mexico, and California; W., the Pacific Ocean; S., the Pacific, Guatemala, and Belize; E., the Caribbean Sea and Gulf of Mexico.

The confederation extends from lat. 15° 45′ to 32° 45′ N., and from lon. 87° to 124° W., and therefore embraces 17 degrees of latitude and 37 degrees of longitude. The city Durango, capital of the State of same name, is situated almost exactly in the centre of this extensive area, and on the same parallel of latitude with San Salvador in the West Indies, Mourzouk the capital of Fezzan, Muscat, Bhopal, Dacca, Canton, and the Sandwich Islands.

Form and Dimensions.—The form resembles a cornucopia, with its mouth directed towards Washington. The extreme length from the head of the Gulf of California to Central America, is 1800 miles: the extreme breadth along the northern frontier amounts to 1300 miles, but across the Isthmus of Tehuantepec it does not exceed 130 miles.

Area.—The area is very uncertain, but is estimated by the most recent authorities at 856,000 square miles, or seven times the area of the British Isles.

Population.—In 1852 the population, including Yucatan, was estimated at 7,845,205, a number which does not greatly exceed the present population of Ireland.

Political Divisions.—The confederation consists, at present, of 22 states, 3 territories, and 1 federal district, making in all 26 political divisions. Yucatan, which declared herself independent a second time, in 1846, has again entered the Union. Presently, therefore, there are 10 northern, 10 central, and 6 southern states, as established in the following table:—

TEN NORTHERN STATES.

Lower California (Territory).—La Paz 2, Loreto 1 (S.E. coast).

Sonora.—Arispe 7, Pitic 8, Ures 7, Sonora 8 (Sonora), Guaymas 3 (Yagui).

Chihuahua.—Chihuahua 14 n., Presidio del Norte, San José de Parral, 5 n. (Conchos, *affl.* Rio del Norte), San Bartolomeo, 20 (Rio Florida *affl.* Conchos).

Coahuila.—Saltillo 20 (Tigré), Santa Rosa 10, Coahuila or Monte Lovez 4 (Sabinas, *affl.* Rio del Norte).

New Leon.—Monterey 14, Linares 4 (Tigré).

Tamaulipas.—Victoria or New Santander 6 (Santander), Matamoros 20, Revilla (Rio del Norte).

San Luis Potosi.—San Luis 40 n. (Tampico), Valles 4 (Panuco).

Zacatecas and Aguas Calientes.*—Zacatecas 25 n, Fresnilla 18 n. (Santander), Sombrerete 18 n. (Rio Grande de Parras), Lagos 15, Aguas Calientes 20 (Rio Santiago).

Durango.—Durango 22 n. (Culiacan), Nombre de Dios 7 n. (Rio Grande de Parras), San Juan del Rio, 10 n. (Nasas).

Sinaloa.—Culiacan 8 (Culiacan), Sinaloa 10 (Sinaloa), Los Alamos 8 n., Villa del Fuerté 5 (Rio del Fuerté), Mazatlan 15 (W. coast), Santa Cruz 10 (Mayo).

TEN CENTRAL STATES.

Xalisco or Guadalaxara.—Guadalaxara 63 n., San Blas 5, Tepic 25 n. (Rio Grande de Santiago).

Colima (Territory).—Colima 32 (Colima).

Michoacan.—Morelian, formerly Valladolid 25 n. (Lerma, *affl.* Santiago), Pascuaro 6 (L. Pascuaro), Zamora, 6 (L. Chapala).

Guanaxuato.—Guanaxuato 49 n., Villa de Leon 20, Salamanca 15, Irapuato 12, Zelaya 10 n. (Lerma).

Queretaro.—Queretaro 30 n. (Lerma), San Juan del Rio 10 (Pate, *affl.* Panuco).

* Aguas Calientes is sometimes regarded as forming the east part of Xalisco.

MEXICO.—Tezcuco 10 (L. Tezcuco), Toluca 12, **Lerma 5, Tenanzingo** (Lerma), Zimapan 9, Tula (Panuco).

FEDERAL DISTRICT OF MEXICO.—Mexico 220 (L. Tezcuco).

TLASCALA (Territory).—Tlascala 4 (Nasca).

VERA CRUZ. Vera Cruz 8, Tampico 7, **Xalapa** 10 n. (Gulf of Mexico), Oribava 16 (Rio Blanco).

PUEBLA.—La Puebla 72, Cholula 10 (Nasca), Tehuacan 12 (Salado, *affl.* Alvarado).

SIX SOUTHERN STATES.

GUERRERO.—Acapulco 5 (Pacific), Zacatula (Bolsas), Tixtla 5.

OAXACA.—Oaxaca 25 (Rio Verde), Tilapa (Pacific).

TEHUANTEPEC.—Tehuantepec 14 (Tehuantepec).

CHIAPAS.—Ciudad Real, or San Christoval, formerly Ciudad de las Casas 4, Chiapas 15, Tuxtla 5, San Bartolomeo 8, Commitan or Comitlan 10 (Tabasco), *Palengue* (Chacamas, *affl.* Usamasinto), Soconusco n. (Pacific).

TABASCO.—San Juan Bautista or Villa Hermosa 8, Port Victoria or Frontera de Tabasco (Tabasco).

YUCATAN.– Merida 40 n., Campeachy 15 (Gulf of Mexico), Valladolid 15 (Bolina), Izamal (Silam).

Descriptive Notes.—NORTHERN STATES.—*La Paz* and *Loreto*, two small towns on the S.E. coast of Lower or Old California, with a celebrated pearl-fishery in the vicinity, now nearly abandoned. Loreto is the oldest establishment of the Spaniards in California. *Arispe* and *Sonora* have rich gold and silver mines in their vicinity. It is said that the household utensils in Arispe are nearly all of pure gold. *Chihuahua*, the chief mart for the trade between Santa Fé and the United States. *Saltillo*, a well-built, handsome, and important town on the Tigré, with extensive woollen manufactures, and a large annual fair. *Santa Rosa* has silver mines in its vicinity. *Monterey*, a considerable town on the Tigré, 180 miles from its mouth. It is the most important place in Northern Mexico, and near it are valuable gold, silver, and lead mines. *Matamoros*, an important river-port town on the right bank of the Rio Grande del Norte, exporting specie, hides, wool, and horses. *San Luis Potosi*, an important town near the source of the Tampico, maintaining an active home and foreign trade. *Zacatecas*, the principal mining city of the state of same name, all the towns of which are extensively engaged in mining silver—the neighbouring mountains being the richest in the world in that precious metal. *Aguas Calientes*, so named on account of the *hot springs* in its vicinity, is admirably situated for trade, being on the high road from Zacatecas to Sonora and Durango, and on that from San Luis Potosi to Guadalaxara. *Durango*, a considerable place carrying on a good trade in cattle and leather, and having iron mines in the vicinity. *Culiacan*, a depot for goods passing from Mazatlan to Guaymas, and containing many private houses, richly and beautifully furnished—many of the inhabitants having realised large fortunes from the silver of the neighbouring Sierra. Here are extensive silver-amalgamation works, and a government mint. *Mazatlan*, a cheerful, well-built town, greatly superior to any other on the Pacific coast of Mexico. The banana and cocoa-nut tree thrive here in the gardens.

CENTRAL STATES.—*Guadalaxara* is, after Mexico, the largest and most interesting city of the Confederation; it covers a wide extent of surface, and contains several magnificent palaces, numerous churches, and other indications of wealth. It was founded by the Spaniards in 1551, has well supplied markets, and extensive manufactures of cotton-shawls, and of jars made of scented earth. *Colima*, the principal town in the territory, of same name, stands in a fertile plain S.W. of the volcano of Colima. It has considerable trade. *Morelian*, a handsome town of considerable size, 115 miles W.N.W. of Mexico. *Guanaxuato*, a large but mean-looking town formed of a number of villages, in the centre of one of the richest mining districts in the world, and standing on the plateau of Anahuac, 6869 feet above the level of the sea. *Queretaro*, 110 miles N.W. of Mexico, is noted for its magnificent aqueduct, 10 miles in length, and for the ratification of the treaty of peace in 1848 between Mexico and the United States. *Tezcuco*, though the capital of the state of Mexico, is an inconsiderable town deriving its chief interest from historical associations, and from the remains of antiquity which it contains, especially three vast pyramids, and a palace said to be that of Montezuma, the last of the native Mexican princes. MEXICO (the *Tenochtitlan* of the ancient Aztecs), capital of the Federal district of same name and of the Mexican confederation, is universally regarded as one of the finest and wealthiest cities in the world, though in population it does not exceed Edinburgh. It is situated in a spacious plain of about 1700 square miles in area, enclosed by mountains, and containing many fine lakes. The city stands at an elevation of 7471 feet above the sea level. When taken by Cortez in 1521, it occupied several islands in the Lake Tezcuco, from which it is now 2½ miles distant. The churches and other public buildings contain a vast amount of wealth in statues, vases, candelabras, balustrades, &c., composed of the precious metals, and ornamented with diamonds and precious stones. The cathedral, a large and imposing edifice, stands on the site of the principal temple of the Aztecs, and contains a remarkable monument of antiquity, the calender-stone of that nation—an immense mass of porphyry inscribed with astronomical signs and figures. *Tlascala*, a small town east of Mexico, built long before the arrival of Europeans in the New World. *Vera Cruz* and *Tampico*, the principal seaport towns of the confederation, are extremely unhealthy: the trade is extensive, the exports consisting chiefly of bullion, cochineal, sugar, flour, indigo, provisions, drugs, vanilla, logwood, and pimento. *Xalpa* gives its name to the drug *jalop*, which grows here wild. *La Puebla*, noted for its numerous churches and its manufactures of soap, glass, iron, and steel,

SOUTHERN STATES.—*Acapulco*, a seaport town on the Pacific coast, with a fine harbour, and rivalling Mazatlan in the extent of its commerce. It was once celebrated for the rich Spanish galleon which annually departed from it for Manilla, laden with the precious metals of Mexico, and returning with the products of eastern Asia. *Oaxaca* has manufactures of chocolate, soap, and perfumery, and an active trade in sugar and cochineal. *Tehuantepec*, near the south side of the Isthmus, of same name, was, in 1853, sold to the United States for 25,000,000 dollars. *Merida*, situated about 30 miles from the north coast of Yucatan, is connected with its port, Sisal, by a good road, but its trade is inconsiderable. It has a Moorish aspect, having been built at a time when that style prevailed in Spanish architecture. *Campeachy*, the principal seaport town of the states, is strongly fortified, has a college, ship-building docks, and a good export trade in cotton, wax, and a species of logwood called "Campeachy wood."

Islands.—Angeles, Tiburon, Cerralbo, and several smaller islands, in the Gulf of California; Carmen and Port Royal in the Gulf of Mexico, between Tabasco and Yucatan; Cozumel and Ambergris Key, in the Caribbean Sea, off the east coast of Yucatan.

Capes.—Cape San Lucas, the south extremity of Lower California; Point San Eugenio, and Point San Lazaro, W. of Lower California; Cape Corientes, W. of Xalisco; Cape Catoche, N.E. of Yucatan; Cape Roxo, N.E. of Vera Cruz.

Bays and Gulfs.—Gulf of California, between the Peninsula of California and the mainland; Vera Cruz Bay and Coatzacoalcos Bay, in the Gulf of Mexico.

Mountains and Table-Lands.—The mountain-system of Mexico is altogether peculiar. Almost the entire country consists of an enormous plateau raised by volcanic forces to an elevation varying from 6000 to 9000 feet, and ramifying as the land grows wider into several diverging chains.

This plateau, known as the table-land of Anahuac, attains its highest elevation between the capital and Vera Cruz, or about the parallel of 19° N., and before it projects its diverging arms. In this latitude, and proceeding from E. to W., are the following lofty volcanic peaks—viz. Orizaba, 17,347 feet, now extinct; Sierra Nevada, or Iztaccihuatal, 15,703 feet; Popocatepetl, the culminating point of Mexico, 17,720 feet; Nevado de Toluca, 15,250 feet; and Jorullo, which, on the night of 28th September 1759, rose from the level of the plain to a height of 4149 feet. All these, except the last, rise above the line of perpetual snow, which in this latitude has an elevation of about 15,000 feet. North of Guanaxuato (lat. 21°), the elevated mass divides into three branches, the central of which bends to the N.N.W. till it enters the United States, and merges into the Rocky Mountains, about lat. 44°. In the S. it is known as the Sierra Madre, and farther N. as the Sierra de los Mimbres. The eastern branch or Cordillera of Cohahuela and Potosi, runs through the state of San Luis Potosi, and gradually sinks in elevation till it disappears in the plain watered by the Rio Grande del Norte. The western branch, or Cordillera de Sonora, extends along the Gulf of California from Lake Chapala to the Rio Colorado. In the state of Sonora it forms the Pimeria Alta, which are celebrated for their gold mines. The only low grounds of any extent in the country occur along the coast of the Gulf of Mexico, especially in the states of Tamaulipas and Yucatan, which are generally but little raised above the sea-level.

River System.—With exception of the Rio Grande del Norte, which separates the country from the United States, and the Rio Colorado, which forms the boundary between Sonora and Old California, the rivers of Mexico are generally mere torrents, which, rushing from the elevated table-land, reach the sea after a short course.

The chief of these are the Sonora, Yagui, Mayo, Fueste, and Culiacan, flowing westward into the Gulf of Mexico; the Rio Grande de Santiago (from Lake Chapala), Rio Bolsas, and Tehuantepec, discharging their waters into the Pacific ocean; and the Tabasco, with its affluent the Usamasinta, the Panuco with its tributary the Tampico, and the Santander falling into the Gulf of Mexico. For the towns on the Rio Grande del Norte, see under "United States."

Lakes.—The lakes on the Mexican table-land are very numerous, and many of them of volcanic origin. The largest are *Chapala*, with an area of about 1300 square miles, between Xalisco and Michoacan; *Parras*, in Coahuila; *Tezcuco*, in the immediate vicinity of the capital; and *Chancanab*, in Yucatan. Several large salt-water lagoons fringe the coast of the Gulf of Mexico, the chief of which are *Madre, Tampico, Tamagua*, and *Terminos.*

Minerals.—Mexico has long been celebrated for its minerals, and especially for the inexhaustible supply of the precious metals which it contains.

To obtain possession of the latter was the great motive that led to the discovery and conquest of the country on the part of Spain early in the sixteenth century. More silver has been obtained from its mines than from all the rest of the world, while the produce of its gold mines has only been inferior to those of Peru, and latterly to those of California and Australia. Humboldt states that, at the period of his visit, there were 3000 mines of gold and silver in the country. The total gold and silver coinage of the Mexican mints, from 1535 to 1850, amounted to five hundred and fifty-five millions sterling, giving an average of nearly two millions annually, while only one-tenth of the whole was gold. In the beginning of the present century the annual produce exceeded £5,000,000, but during the troubles of the revolutionary war the mines were neglected, and many of them wholly ruined. Vast numbers of the people, however, are at present daily engaged in mining on their own account, but in small companies, and in a very desultory manner. Guanaxuato is the centre of the richest mining district. Its principal silver mine, discovered in 1558, has alone yielded more than a quarter of the whole produce of Mexico. San Luis Potosi, Zacatecas, Durango, Chihuahua, and Mexico, are also highly productive. In 1850, an extremely rich quick-silver mine was discovered near Pitec, in Sonora, which promises to give a new impetus to mining operations in Mexico. Valuable copper mines are also wrought in Chihuahua; iron ore is abundant in Durango; tin, lead, zinc, and antimony in several states; but, hitherto, coal has nowhere been found.

Climate and Vegetation.—Owing to the great elevation and semi-tropical position of Mexico, the climate is exceedingly various. Three regions, however, may be distinguished--the tropical, temperate, and cold.

The first embraces the low grounds on the east and west sides, to the height of 2000 feet, having a mean annual temperature varying from 68° Fah. in the N., to

78° in the S. It produces in abundance all the ordinary vegetation of the tropics, including maize, manioc, pepper, vanilla, indigo, cotton, coffee, sugar-cane, and the banana; but the excessive heat and the great fall of rain render it almost uninhabitable. At Vera Cruz, for example, the average fall of rain for nine years (from 1822 to 1830) was no less than 185 inches, but in some years it is greatly less. The yellow fever and other virulent diseases are very prevalent, and it affords an admirable illustration of the maxim in physical geography, that wherever vegetation attains its most luxuriant development, there human life languishes. The temperate region is of small extent, embracing the slopes of the table-land to the height of about 6000 feet. Here the climate is mild and gentle, and the vegetation includes most of the cereals and fruit-trees of Europe. The cold region embraces the whole remainder of the country, including the vast table-land. The climate, though agreeable and healthy, is excessively dry, and the mean annual temperature is about 62°, while the vegetable productions include the Mexican oak, pine, agave, arbutus, dahlia, geranium, and cactus. Among cultivated plants may be mentioned the potatoe, which is extensively reared, and which in its wild state is sometimes met with at an elevation of 10,000 feet; maize, wheat, barley, cacao (a species of nut in shape and size resembling the almond), and Spanish pepper or capsicum, which is consumed by the inhabitants in enormous quantities. Among the cultivated plants of Mexico there is none more important or characteristic than the maguëy (*Agave Americana*, the *pulque* of the Spaniards, the *octli* of the Aztecs), from the sap of which is prepared the favourite drink of all classes. It thrives on the poorest soil, so that near a town or populous district a plantation of it always forms a valuable estate.

Zoology.—The wild animals are exceedingly numerous, comprising the bison or American buffalo, which in mid-winter enters the country in immense herds from the forests of the north-west, the tapir, jaguar, puma, ocelot, tiger-cat, weasel, sloth, glutton, ant-eater, porcupine, grisly bear, wild swine, and monkeys.

The feathered tribes exist in countless numbers, and comprise many species found also in the United States. Reptiles include the Mexican crocodile, the alligator, cayman, and rattlesnake. The coasts are frequented by the whale, seal, and sea-cow, and the rivers abound in fish. The pearl-fishery, in the Gulf of California, once so profitable, is now abandoned; but a species of murex yields a valuable purple dye. Perhaps the most useful animal in the Mexican fauna, is the cochineal insect, which yields, next to the precious metals, the most important article of export. The domestic animals were all introduced by the Spaniards; for, notwithstanding the degree of civilisation to which the ancient Mexicans had attained, they did not possess the art of taming any of their wild animals.

Ethnography.—The population of Mexico is composed, as in other Spanish American States, of three distinct races—aboriginal Indians, Europeans who are nearly all Spaniards, and Africans or negroes, who were formerly in a state of slavery. Besides these there are various mixed races—mestizos, zambos, mulattoes, quadroons, &c.

The Indian population is by far the most numerous, being variously estimated from 3,000,000 to 4,000,000: they form the great mass of the labouring population, are averse to the mechanical arts, and in many places assert a wild independence. The Europeans or whites are reckoned at about 1,000,000; they are the wealthiest and most powerful section of the community, and are distinguished as *chapetones*, or those born in Spain, and whose number is now very small, and *creoles*, or descendants of Spanish colonists. The negroes, or *chinos*, do not exceed 6000, and are rapidly decreasing in number, notwithstanding the abolition of slavery. The *Mestizos*, formed by the commingling of European and Indian blood, number about 2,000,000, and are generally engaged in trade and mechanical pursuits. The *Mulattoes*, descended from Europeans and Africans, and the *Zambos*, from the mixture of African and Indian races, are few in number and deficient in intellect. The distinctions of colour and race are now of far less importance than they were formerly, as the privileges of caste no longer exist, and equal political rights are conceded to all.

LANGUAGES AND CIVILISATION.—Spanish is the universal language of the white population and the general medium of intercourse. No fewer than thirty-five distinct tongues are spoken by the various Indian tribes within the limits of the Confederation. The chief of these are the Mexican or Aztec, Otomi, Terasco, Misteco, Zapoteca, and Mayan. Mexican was the language of the semi-civilised tribes at the time of the Spanish conquest of the country, and it still prevails in the States of Mexico, Vera Cruz, and Tabasco. It possesses the same general characteristics as the other American tongues, and is closely allied to them in internal structure. It is distinguished, however, from all the other members of its class by the possession of a special form, called the "reverential," which pervades the entire language, every vocable of which, when articulated, reminds the hearer of the social position of the speaker. This peculiarity of the Aztec is a striking monument of the highly artificial state of society that must have prevailed in ancient Mexico, and of the subordination in which the mass of the people were held by their rulers. (See under "Antiquities.") The Otomi language is remarkable for its monosyllabic structure, and for some curious though remote affinities, which apparently connect it with the Chinese. The Mayan language is spoken in Yucatan, and resembles, in general, the other American dialects, but is destitute of the sounds represented by the letters *d*, *f*, *g*, *j*, *q*, *r*, *s*, and *v*. The language of the Toltecs, now extinct, and many others, are very imperfectly known.

Antiquities.—The ancient Mexicans, Toltecs, and Yucatanese had attained to a very considerable degree of civilisation before the arrival of the Spaniards, in the early part of the sixteenth century. They possessed a regular monarchical government; they had stationary abodes, and pursued agriculture with success; maize was the staple crop, cacao was cultivated for chocolate, and vanilla was used as with us; mining was extensively practised, and the precious metals sold in the markets; they were well skilled in architecture, raised great edifices, constructed vast palaces, pyramids, roads, aqueducts, and bridges—the arch being of a peculiar triangular shape, formed by courses of stones projecting over each other. One of the most stupendous monuments of this style of architecture was the great temple at Palenque, which comprised within its extensive precincts various sanctuaries and sepulchres, courts and cloisters, subterranean galleries, and cells for the priests. It is now, however, eclipsed by the more-recently discovered ruins of Itzalana in Yucatan, which indicate a style of art distinct from that of the Aztecs. The remains of sculpture found in Mexico are numerous and of great variety of form and material. Feather-painting was a favourite art, in which the gorgeous plumage of tropical birds was employed to produce exquisitely-finished pictures. They had a more accurate calendar than the Egyptians, Greeks, or Romans; while the splendid ruins of Palenque exhibit medals, musical instruments, colossal statues, and well-executed figures in low relief, adorned with characters which appear to be real hieroglyphics. By means of these they were able to record many facts connected with their national history. They usually wrote on cotton cloth, on the prepared skins of animals, and on a species of paper made of the leaves of the great aloe, similar to that manufactured by the ancient Egyptians from the papyrus. Numerous manuscripts, executed in this mode of picture-writing, were committed to the flames by the Spaniards; but a few precious relics still survive in some of the libraries of Europe. The Aztecs and Toltecs entered Mexico from the N., the former in A.D. 1196, and the latter in 648. Both tribes appear to have migrated hither from the great valley of the Mississippi. Their various arts differ so widely from those of any nation of the Old World, that it is now generally allowed to have been American both in its origin and development; for the ruined cities which are found in so many localities are generally allowed to have been built only a short time before the arrival of Europeans in the New World. (See under South America, art. "Ethnography.")

Religion.—The established religion, and, indeed, the only one recognised by the government, is the Roman Catholic; and though others are tolerated by law, the intense bigotry of the people allows in practice little freedom of worship. Almost the entire white population are devoted Romanists, and, with few exceptions, the votaries of pleasure, profligacy, and crime. The Aztecs and other native tribes also profess a nominal adherence to that Church, interweaving its ceremonies with the idolatrous rites of their ancestors. The annual revenue of the Church is estimated at nearly twenty million dollars, and the religious edifices are distinguished by their costly decorations.

Education is in a backward condition, but several primary and private schools have been opened recently. There are also eight colleges of the Propaganda, several seminaries sustained and directed by the clergy, national colleges, a school of mining, a school of medicine, and a military school. Mexican public libraries are rich in books, MSS., and instruments for the study of the sciences; and there are 54 literary and political periodicals published in the confederation.

Government, &c.—From the conquest of the country, in 1521, till 1824, Mexico formed one of the four great Vice-royalties of Spanish America, and was sadly misgoverned. In the latter year the present political system—a representative, popular, and federal republic—was adopted, which in many of its features resembles that of the United States.

The president is elected for four years. The legislative power is vested in a general congress, consisting of a Senate and Chamber of Deputies. The deputies are elected by the people for two years,—there being one for every 50,000 of the population. Each State elects two senators, and a number equal to all the states is elected by the Senate, Supreme Court, and deputies conjointly. There are thus 69 senators, one-third of whom retire every two years. The laws are said to be excellent, but the continually-recurring insurrections and revolutions render the executive power little better than nominal; and the present probability is that the confederation will ere long fall to pieces, unless upheld by foreign intervention. According to statute, the military force consists of 91,299 men, including 26,353 permanent troops; but in 1855, only a half of the total number was organised. The navy consists of nine small vessels, carrying, in the aggregate, 35 guns and 300 marines. The receipts, in 1856, amounted to 8,500,000 dollars; the expenditure to 13,126,000 dollars; and the public debt to 133,524,242 dollars. During the last four years, however, the debt has been considerably increased.

Commerce and Industry.—The commerce of Mexico is inconsiderable. The principal ports on the Gulf of Mexico are Vera Cruz, Tampico, Matamoros, and Monterey; and on the Pacific coast, Mazatlan, Acapulco, San Blas, and Guaymas.

The exports consist of metals, cochineal, hides, cattle, vanilla, jalap, and a few other medicinal herbs. In 1852, the exports to the United States alone were valued at 1,600,000 dollars. The imports consist chiefly of manufactured goods, earthenware, firearms, hardware, and machinery. The principal imports are from Great Britain and the United States, the former consisting principally of plain and printed calicoes, cotton-twist, silk, and linen goods, the total value of which, in the year mentioned, amounted to £200,000. The manufactures are unimportant, amounting in the aggregate to only 80,000,000 or 90,000,000 dollars annually. In some parts of Mexico soap and candles are extensively manufactured for home consumption, as also coarse articles of clothing, paper, gold and silver utensils and ornaments, delft and glass-ware, sugar refineries and distilleries. In 1850 there were 72 cotton factories, 6 woollen factories, 70 hand-machines for the manufacture of silk, and numerous mills for the preparation of olive oil. Carbonate of soda abounds on the table-land, and is extensively manufactured in several places. Agriculture is greatly neglected, and much of the land cultivated by the Spaniards is now lying fallow; but the natural fertility of the soil causes it to yield a sufficient supply for the wants of the inhabitants.

Internal Communication.—The roads are deplorably bad and impracticable for wheel-carriages. The descent from the table-land to the sea is everywhere precipitous, and presents such difficulties in the way of carrying goods as will probably always cut off the interior states from a fair participation in the commerce of the globe.

Mules are the only beasts of burden, and vast numbers of them are employed by carriers and in the mines. A short line of railway connects Mexico with Tacuba, a few miles to the N.E.; and another is constructed from Vera Cruz to San Juan del Rio, which will ultimately connect the capital with the principal seaport of the Confederation.

CENTRAL AMERICA.

Boundaries.—N.W., Yucatan and Chiapas; W. and S., the Pacific; E., the Granadian Confederation and the Caribbean Sea. Lat. 8° to 18° 30′ N.; lon., 81° 30′ to 93° 15′ W.

The volcano of Guanacaure, in the N.W. of Nicaragua (lat. 13°, long. 87°) in the centre of the area thus indicated, is on the same parallel of latitude with the island of St Vincent in the West Indies, Bathurst in W. Africa, Lake Tchad, Aden, Madras, Bankok, and the Philippine Isles; and on the same meridian as Lake Michigan, and as Pensacola in Florida.

The greatest length from N.W. to S.E. is about 900 miles; the breadth varies from 70 to 350 miles.

Area, Population, and Political Divisions.—Omitting the Mosquito Shore, on the E. coast of Honduras and Nicaragua, the boundaries and political character of which are not yet precisely determined, this region comprises six States, five of which are independent republics, and one (Balize) a British colony.

STATES.	Area in Eng. Square Miles.	Estimated Population in 1855.
Guatemala, ...	43,380	970,450
San Salvador, ...	9,594	394,000
Honduras, ...	39,600	350,000
Nicaragua, ...	49,500	260,000
Costa Rica, ...	13,590	215,000
Balize, or British Honduras, .	19,200	11,066
Totals, ...	174,864	2,200,516

The united area, according to the above estimate, is about one and a half times that of the British Isles; but, according to other authorities, it is greatly larger. The aggregate population is considerably less than that of London. The following are the principal towns in the different States:—

GUATEMALA.—New Guatemala 60, n., Old Guatemala 12, n., Chiquimula 6, n., Zacatepec 8, n. (Montagua), Coban 14 (Polokoc), Quesaltenango 14, Totonicapan 12, n. (Samala), Istapa (Pacific), St Thomas (Gulf of Honduras).

SAN SALVADOR.—Cojutepcque 15, n. (L. Ilopango), Sonsonate 10, Acajutla, La Libertad, Concordia (Pacific), La Union (Bay of Fonseca), San Vicente 8, Sacatecoluca 5, n., Ilobasco 4, Suchitoto 6, Santa Anna 10 (Lempa), San Miguel 8 (San Miguel).

HONDURAS.—Comayagua 18, Las Piedras 6 (Humuya, *affl.* Ulna), Juticalpa 10, n., Catacamas (Patook), Poyais (Poyais), Omoa 2, Puerto, Caballos, Truxillo 5 (Gulf of Honduras), Tegucigalpa 10 (Choluteca).

NICARAGUA.—Leon 25, n., Managua 13 (L. Leon), Granada 10, Nicaragua 8 (Nicaragua), Chinondega 8, n., Rialeio 5, Masaya 13, n. (Pacific), Segovia (Wanks R.), San Juan de Nicaragua or Greytown, Blewfields or Bluefields, Gracios-a-Dios (Mosquito coast).

COSTA RICA.—San José 30, n., Cartago 23, n., Alajuela 12, n. (Rio Grande), Guanacasto 9 (Nicoya), Nicoya, Punta Arenas, Esparsa, n. (G. Nicoya), Port Culebra (Pacific), Eredia, n. (G. Dulce).

BALIZE or BRITISH HONDURAS.—Balize or Belize 5 (Balize).

Descriptive Notes.—*New Guatemala*, the capital of the state since 1776, is a mean-looking city, occupying a wide area, as the houses are all of one story, owing to the frequent earthquakes. It stands on the border of an extensive plain, and at an elevation of nearly 5000 feet above the sea. The inhabitants are distinguished for their artistic and manufacturing skill, and excel in the production of muslins, fine cotton yarn, silver articles, artificial flowers, and embroidery. The exports are numerous, consisting chiefly of sugar, cotton, coffee, cigars, dyewoods, and other native products. Here is an old viceregal palace, a fort, university, and sixty richly ornamented churches. *Old Guatemala*, founded in 1527, was the capital of the country till 1773, when it was nearly destroyed by an earthquake. *Quesaltenango* ranks next to the capital for the extent of its trade and the variety of its manufactures. The chief exports are wheat, cacao, sugar, woollen and cotton fabrics. In its vicinity are numerous Mexican antiquities. *Totonicapan* is chiefly inhabited by Indians, who speak the Quiche language. *Istapa* and *St Thomas* are the principal seaports of the state; the former on the Pacific coast, and the latter on the Caribbean Sea. *Cojutepeque*, capital of the state of San Salvador since 1854, when San Salvador, its former capital, was destroyed by an earthquake. The ruined city, which was built in 1528, was a place of some importance, with 20,000 inhabitants, and was situated fifteen miles farther north than the present capital. *Sonsonate*, founded about 1534, has acquired some importance from its numerous distilleries, called into existence by the opening of the Californian market. It has also a large trade in indigo and tobacco. *Acajutla* and *Libertad*, on the Pacific, with *La Union* on the Bay of Fonseca, are the principal seaports of San Salvador. *San Vicente*, at the foot of a volcano of same name, has extensive plantations of indigo and tobacco in its vicinity. *Comajagua*, formerly Valladolid, capital of the state of Honduras, has 18,000 inhabitants, a college, and several convents. *Omoa* and *Truxillo* are the principal seaports of Honduras, and are both situated on the N. coast: the former is very unhealthy, and is the hottest place in the New World. *Tegucigalpa* has gold, silver, and copper mines in its vicinity. *Leon*, capital of the state Nicaragua, situated in a fertile plain about midway between the Pacific and Lake Managua, occupies the site of a large Indian town, and, though possessing an imposing appearance, is now greatly decayed. Its public edifices, which include a magnificent Gothic cathedral, are regarded as the finest in Central America. The city has suffered greatly during the political troubles of the last thirty years. The manufactures consist chiefly of articles of dressed leather and cutlery. *Managua* is chiefly inhabited by Indians, who are noted for their dexterity in imitating articles of foreign manufacture. *Granada* exports cacao, indigo, wool, hides, and Brazil wood. *Nicaragua*, situated on the isthmus which separates Lake Nicaragua from the Pacific, is likely, ere long, to become a place of some importance. (See under "Lakes.") *Realejo*, the principal seaport of Nicaragua, on the Pacific coast, commands some trade. *San Juan de Nicaragua*, or *Greytown*, in the tract of country known as the Mosquito Territory, exports hides, indigo, and tobacco. The harbour is one of the finest in Central America. The town, which was declared a free port in 1851, is much frequented by miners on their way to and from California. The Mosquito Territory, which consists of the eastern coasts of Nicaragua and Honduras, is governed by an Indian chief, who is under the protection of Great Britain. Immense quantities of fine timber are found at various places along the coast, together with sarsaparilla and tortoise-shell of the finest quality. *Blewfields*, in the same territory, is a collection of mean huts, but forms the residence of the Indian chief already referred to. *San José*, capital of the state Costa Rica, about midway between its opposite coasts, lies in a deep valley which is well watered by canals and fountains. *Cartago*, the former capital of the republic, was a place of some importance prior to 1841, when it was nearly destroyed by an earthquake. Near it is a mountain of same name, 11,480 feet high, from the summit of which both oceans may be seen. *Punta Arenas* and *Culebra* are the two principal seaports of the state. *Balize*, capital of British

Honduras, at the mouth of the river Balize, on the Bay of Honduras, has a governor's house, barracks, and a fort which is literally built on British ground—*i. e.*, on a mound formed by the ballast of ships from England. Balize is the depôt of British manufactured goods and foreign merchandise intended for Central America. Mahogany and logwood are largely exported.

Capes.—The principal capes on the E. side are Gracios-a-Dios, Camaran, and Honduras; and on the W., Blanco, Mata, and Burica, all in Costa Rica.

Islands.—Turneffe and the Bay Islands, in the Gulf of Honduras. The Bay Islands, the principal of which are Ruatan, Bonacca, and Utilla, were proclaimed a British colony on 17th July 1852, and attached to the government of Jamaica.

Gulfs and Bays.—Gulf of Honduras, between Honduras and Balize; Mosquito Gulf, E. of Costa Rica; Bay of Fonseca, between San Salvador and Nicaragua; Gulf of Nicoya and Gulf of Dulce, E. of Costa Rica.

Surface and Mountains.—The surface consists for the most part of an immense plateau or table-land, which extends, with one solitary interruption, from the isthmus of Tehuantepec, in Mexico, to that of Panamá, in the Granadian Confederation. A chain of hills, not exceeding 2000 feet in height, connects it with the plateau of Anahuac on the N.W. At its western extremity it attains an elevation of from 5000 to 6000 feet, but rapidly descends as it proceeds south-eastwards to the isthmus of Panamá, where the highest point of the proposed railway connecting the Caribbean Sea with the Pacific is only 300 feet above the level of the sea.

The table-land consists everywhere of a succession of plains and hilly ridges divided by narrow and elevated valleys, and surmounted on the Pacific side by a chain of mountains, many of which are of volcanic origin. Guanacaure, Viejo, and Masaya, in the state of Nicaragua, and among the loftiest of the volcanoes of Central America, together with Cartago, in Costa Rica, attain an elevation of about 12,000 feet. The slope inclining to the Pacific is abrupt and precipitous, but that which fronts the Caribbean Sea is gentle and gradual, terminating in the plain of Mosquito, which is described as a perfect level. The plain of Nicaragua, 175 miles in length, is also very low—the lake in its centre being only 134 feet above the level of the Pacific; while in the state of Honduras, between the head-waters of the Ulua and Goascoran, there occurs a complete gap in the cordillera, through which it is proposed to construct a railway from sea to sea.

Rivers.—Owing to the narrowness of the isthmus, the rivers of Central America are all inconsiderable in magnitude. With exception of the Lampa, separating Guatemala from San Salvador, the rivers that descend the abrupt slope, or that directed to the Pacific, are mere torrents; while the Lampa itself has a course of only 35 miles. Of those watering the longer slope and flowing towards the Caribbean Sea, the following are the principal: the Honda and Balize, in British Honduras; the Rio Dulce, Motagua, and the head-waters of the Usamasinta, in Guatemala; the Ulua, Seco, and Poyais, in Honduras; the Segovia, between Honduras and Nicaragua; the Toacas and Escondidas or Blewfields, in Nicaragua; and the San Juan, between Nicaragua and Costa Rica.

Lakes.—The principal lakes are those of Nicaragua and Leon or Managua, both of which are situated in the state of Nicaragua.

The first-mentioned receives the Tipitapa from Lake Leon, and discharges its surplus waters into the Caribbean Sea through the San Juan, which is navigable nearly throughout. The lake is 140 miles long, 40 miles broad, and has an elevation of 134 feet above the level of the Pacific, or of 128 feet above that of the Caribbean Sea—there being a difference of upwards of six feet between the level of both seas at low water. The tides on the Pacific side are considerable, amounting to about 27 feet, while on the opposite coast they rarely exceed 12 or 13 inches. The surface of Lake Leon is only 28 feet above that of Lake Nicaragua, while between its western shore and the ocean is a neck of land, which, at its narrowest part, is only eleven miles across. For these and other reasons it has long been proposed to establish in the line of these lakes and rivers a ship-canal, uniting the two oceans, and thus obviating the tedious and dangerous navigation round Cape Horn.

Climate and Natural Productions.—The climate of the coasts and lower grounds is hot, moist, and insalubrious, especially along the Caribbean Sea; but dry, temperate, and healthy on the elevated table-lands.

The rainy season commences about the end of May and continues till the middle or end of October, when the rain falls in torrents, generally accompanied by violent thunder and lightning. The dry season lasts during the rest of the year, and is rarely interrupted by a single shower. Earthquakes are frequent in the interior, and numerous volcanoes, active and extinct, crown the table-lands, especially in Nicaragua. The soil is in general highly fertile, and the indigenous vegetation extremely luxuriant. The whole of Central America, with the exception of the higher elevations of the mountain-chains, is embraced within Schouw's fifteenth phyto-geographic region, otherwise called the region of Cactaceæ and Piperaceæ. (See p. 56.) Below the elevation of 3000 feet, indigo, cotton, sugar, cacao, rice, and tropical fruits, form the principal objects of culture; while maize, wheat, and the cochineal plant thrive at a higher elevation. Among other natural products may be mentioned tobacco, coffee, balsam, caoutchouc, potatoes, yams, beans, plantain, manioc, logwood and other dye-woods, mahogany, cedar, and sarsaparilla. The mineral productions of the country are highly valuable, and include gold, silver, copper, iron, lead, zinc, and precious stones. The silver mines of Tobanco and Sociedad, and the gold mines of Capatillas, in San Salvador, are highly celebrated; while the silver mine of Tisingal, in Costa Rica, is said to have yielded as much wealth as those of Potosi in Peru. Rich iron mines and vast beds of brown coal exist in the valley of the Lempe. Gold, silver, and copper-mining is extensively carried on in Honduras, where are also found iron, zinc, cinnabar, antimony, and platina, with amethysts, asbestos, chalk, limestone, white marble, and coal. The wild animals are extremely numerous and varied, embracing the puma, wolf, jaguar, wild-boar, black tiger, ocelot, tiger-cat, racoon, opossum, tapir, warec, peccary, fallow-deer, hare, sloth, squirrel, armadillo, and monkey. The other classes of the animal kingdom are all extensively represented. (See pp. 59, 582.) The domestic animals are, for the most part, the same as in Europe, embracing horses of an inferior description, mules which are greatly esteemed, hogs which are reared in great numbers and are of excellent quality, together with cattle, sheep, and goats.

Ethnography.—The population of Central America greatly resembles that of Mexico. The larger portion of the inhabitants are aboriginal Indians; probably fewer than one-fourth of the whole are of European origin; while the remainder, who are named *mestizos* or *ladinos,* are a mixed race, having sprung from the union of the white with the native Indian population.

The Spanish language prevails over all Central America—being now spoken by the great mass of the Indian population, except in Guatemala, where the aborigines have evinced a greater tenacity for the dialects and customs of their forefathers. The Roman Catholic religion prevails everywhere; but the nunneries are open to the public, and the inmates can leave them when they please. A small portion of the Indian population in the different states, more especially in Honduras, continue in their original idolatry. Central America was discovered by Columbus in 1502. In 1527 it was made a Spanish Captain-generalcy, and remained attached to the Crown of Spain till 1821, when Guatemala first declared its independence. The other states speedily followed its example, and, after a severe struggle, succeeded in casting off the yoke of the mother-country. Subsequently they formed themselves into a confederation under the title of the "United States of Central America," which was dissolved in 1839; and they now exist in the form of five sovereign and independent republics. Each state has its own president, vice-president, senate, and assembly of deputies, who are chosen by electoral colleges; while Spanish laws have been replaced by codes modelled on those of the United States. Guatemala, which has nearly a million of inhabitants, is by far the most populous and flourishing state, and has enjoyed a greater share of tranquillity than any of its neighbours. The other states diminish regularly in population from west to east. Owing to the extreme heat on both coasts, by far the greater number of the towns are situated on the table-lands in the interior. They are all of very limited population, only four of their number exceeding 20,000 inhabitants, while New Guatemala alone exceeds 50,000. The principal exports consist of silver and other metallic ores, dye-woods, hides, indigo, cochineal, balsam, sarsaparilla, tobacco, cigars, cacao, rice, coffee, and sugar.

Balize, or British Honduras.—The possession of this colony was long disputed by the Spaniards, but was finally yielded to Britain in 1783. It is chiefly valuable for the excellent mahogany and logwood which we obtain from it. It lies between Yucatan on the N., Guatemala on the W. and S., and the Caribbean Sea on the E. Along the coast it is low and swampy; forests of mahogany and cedar occupy the interior; and the soil in the valleys is moderately fertile. The climate is moist, but not unhealthy; the heat, though great, being moderated by sea-breezes. The colony is well adapted for raising sugar, coffee, cotton, and indigo. The fauna embraces ounces, panthers, tapirs, deer, peccaries, agoutis, armadillos, and monkeys. Birds, fish, and turtle are abundant; manatis and alligators frequent the lagoons. The population, numbering about 11,000, is composed chiefly of negroes, who were first brought to the country as slaves. The white inhabitants are exclusively occupied in commerce; the negro, in cutting mahogany and dye-woods for exportation, and in fishing. Politically, the colony forms a dependency of Jamaica, and is governed by a superintendent.

WEST INDIES AND BERMUDAS.

Position and Boundaries.—The Antilles, or West Indies, consist of a huge archipelago of nearly one thousand islands, extending in a curvilinear line between the peninsula of Florida, in the United States, and the delta of the Orinoco, in South America; and separating the Atlantic Ocean on its N. and E. from the Caribbean Sea and Gulf of Mexico on its S. and W. Lat. 10° to 27° N. lon., 59° to 85° W. They are called *Antilles* from their position being opposite to the American continent, and *West Indies* from Columbus, their discoverer, imagining that they formed the nearest portion of India, a westerly passage to which he was in quest of.

The entire Archipelago is physically divided into four distinct groups—viz., 1. The Bahama or Lucayo Islands, about 500 in number, S.E. of Florida, the larger islands being Great Bahama, Abaco, Eleuthera, New Providence, Andros, San Salvador, Long Island, Acklin, Marignano, and Great Inagua. 2. The Greater Antilles, between the Bahamas and Central America, and comprising Cuba, Jamaica, Haiti or San Domingo, and Porto Rico. 3. The Lesser Antilles or Windward Islands, extending in a semicircular line from Porto Rico to the mouth of the Orinoco, and including the Virgin Isles, Guadeloupe, Desirade, Mariegalante, Dominica, Martinique, S. Lucia, S. Vincent, Barbadoes, Grenada, Tobago, and Trinidad. 4. The Leeward Islands, off the coast of Venezuela, and consisting chiefly of Margarita, Tortuga, Buen Ayre, and Curaçoa.

Area, Population, and Political Relations.—With the exception of Haiti, which now consists of two independent states (Haiti in the W., and Dominica in the E.), and some of the Leeward group which belong to Venezuela, all the West Indian islands are in the possession of European nations. About one-half of the whole area, including the large island of Cuba, belongs to Spain. Great Britain has the next largest share, after which rank France, the Netherlands, Denmark, and Sweden.

TABLE OF WEST INDIA ISLANDS.

Islands.	Government.	Area in English Square Miles.	Population at last Census.
San Domingo, Haiti, or Hispaniola, ...	Haiti and Dominica	29,500	563,000
Cuba, Porto Rico, Isle of Pines, and two of the Virgin Isles, .	Spain.	47,130	1,832,062
The Bahamas, Jamaica, and most of the Windward Islands—(Trinidad, Tobago, Barbadoes, Grenada, St Vincent, St Lucia, Dominica, Montserrat, Antigua, St Christopher, Barbuda, Anguilla, Virgin Isles, &c.), ...	Britain.	13,414	820,792
Guadeloupe, Desirade, Martinique, Marie Galante, Saintes, north part of St Martin—all in the Windward group, ...	France.	1,691	256,511
Curaçao, Buen Ayre, Oruba, Los Roques (Leeward Islands), St Eustatius, Saba, and south part of St Martin (Windward Islands), ...	Netherlands.	413	38,600
St John's, St Thomas, Santa Cruz (Virgin Isles), ...	Denmark.	110	37,137
St Bartholomew (Windward Isles), ...	Sweden.	35	10,000
Margarita, Tortuga, &c. (Leeward Isles), ...	Venezuela.	500	20,000
	Total, . .	92,793	3,578,102

This area is considerably larger than that of Great Britain; while the population is only a little more than one-sixth of that of the latter. The following are the principal cities and towns of the Archipelago:—

INDEPENDENT.—Port-au-Prince 25, Cape Haitien 10, S. Nicolas, Tiburon, Cayes 3, Jacmel 6 (in Haiti), San Domingo 15, Santiago 12, Monte Christo 3 (in Hispaniola).

SPANISH.—Havana 130, Santiago 24, Bahia Honda, Matanzas 17, S. Clara 6, Porto Principe 30, Holguin 8, Bayamo 7, Trinidad 13, S. Espiritu 11 (in Cuba), San Juan 30 (in Porto Rico).

BRITISH.—Nassau, capital of Bahamas, 7 (New Providence), Spanish Town 6, Kingston 35, Port-Royal 15 (Jamaica), Port España 12 (Trinidad), Scarborough 3 (Tobago), Bridge Town 20 (Barbadoes), St George 4 (Grenada), Kingston 5 (S. Vincent), Castries 2 (S. Lucia), Roseau 5 (Dominica), Plymouth (Montserrat), St John (Antigua), Basse-Terre 7 (St Christopher), Road Town (Tortola, one of the Virgin group).

FRENCH.—Basse-Terre 6, Point-à-Pitre 12 (Guadeloupe), Fort Royal 12, St Pierre 30 (Martinique).

DUTCH.—Williamstadt or Curaçao 7 (Curaçao).

DANISH.—Christianstadt 10 (Santa Cruz), St Thomas (St Thomas).

SWEDISH.—Gustavia 10 (St Bartholomew).

Descriptive Notes.—*Port-au-Prince*, or *Port Republicain*—formerly capital of the island San Domingo; more recently of the petty negro empire of Haiti, which had Faustin I., or Soulouque, for its sovereign; and now of the Haitian Republic—is a place of some commercial importance, situated on the W. coast, at the head of the fine Bay of Gonaives. It is chiefly built of wood, is partially fortified, and has an excellent harbour. *San Domingo*, capital of the Dominican Republic, and until 1846 of the Spanish portion of the island, was the first permanent settlement made by Europeans in America, having been founded in 1502, and is now the oldest existing city in the New World. It was at the height of its prosperity during the sixteenth century, but since that time it has greatly fallen off in population and commerce. The bones of Columbus remained in the cathedral of San Domingo till 1795, when they were removed to Havanna. *Havanna, Havana*, or *Havannah*, capital of the island Cuba, on its northern coast, is the largest city in the West Indies, and one of the greatest commercial marts of the western world. About one half of the inhabitants are whites, the remainder being slaves and free coloured negroes. Its principal article of manufacture is cigars, which have long obtained an almost universal celebrity. Havanna was founded by Velasquez in 1511. It is connected by railway with several places in the interior, while the trade is chiefly with Spain, Spanish America, the United States, and Great Britain. *Santiago, Cuba*, or *Santiago de Cuba*, a fortified town on the S.E. coast, is the oldest town in Cuba, of which it was formerly the capital, and is still, next to Havanna, the most commercial in the island. It is surrounded by mountains, and is extremely unhealthy. *Matanzas*, a fortified seaport town on the northern coast of Cuba, with a well-sheltered harbour and extensive commerce. The principal exports are sugar, molasses, coffee, brandy, and bullion. It is connected with Havanna by a railway. *Porto Principe*, in the interior of the eastern part of the island, is a poor, ill-built, but large town. Its port is *Las Nuevitas* on the N. coast. *San Juan*, capital of the island Porto Rico, situated on a small island on the N. coast, which is connected with the mainland by a bridge, is strongly fortified, and has an excellent harbour. It is the seat of government and of the superior courts of the island, and is a large, well-built town. *Nassau*, in New Providence, the capital of the Bahama Islands, is a neat, well-built town, with spacious streets, handsome houses, and a considerable trade. The principal exports are cotton, pimento, and salt. *Spanish Town*, or *Santiago de la Vega*, capital of Jamaica, is a small, ill-built, and unhealthy town, situated in a fine valley, 16 miles W. of Kingston. *Kingston*, the chief commercial city in Jamaica, stands on a fine harbour on the S.E. coast: it is well-built, has extensive trade, and steam communication with England and several West Indian ports. *Port*

España, or *Port of Spain*, capital of Trinidad, is a handsome town on the W. coast, with a spacious harbour and considerable trade. *Bridge Town*, capital of Barbadoes, England's first colony, is a large, gay, and handsome town, and one of the strongest military posts in the West Indies. *St John's*, capital of Antigua, is the seat of government of the Leeward Islands. *Basse Terre*, capital of St Christopher, has an active trade, and a harbour defended by several batteries. *Basse Terre*, capital of the French island Guadeloupe, is the residence of the governor, the seat of a royal court and courts of assize, and has several schools and a botanic garden. *St Pierre*, the largest and most commercial town of the French West Indies, was the birthplace of Josephine, first queen of Napoleon I. *Williamstadt*, the centre of commerce for the Dutch West Indies, is situated on the S.W. coast of the island Curaçoa. *Christianstadt*, the seat of the governor-general of the Danish West Indies, has an excellent harbour defended by a fort and battery, and is the chief entrepôt of commerce with Copenhagen. *Gustavia*, capital of island St Bartholomew, the only colony of Sweden in America, exports some cotton and salt, has a good harbour, and is much frequented by traders.

Surface and Mountains.—The different islands exhibit great diversity of aspect—some being tame and low, others bold and mountainous.

The Bahamas or Lucayos, consisting of a vast number of small, low, flat islands, are situated on banks of sand or coral, and surrounded by reefs, rocks, and shoals. The Great Antilles consist of one immense mountain-chain extending, with certain interruptions now occupied by arms of the sea, from Cape St Antonio in Cuba, to the eastern extremity of Porto Rico, and thence prolonged through the Lesser Antilles to the N.E. coast of South America. It attains its maximum elevation in the eastern end of Cuba, where the Montanos del Cobre reach to the height of 6890 feet. Haiti is traversed by parallel mountain-chains, Mount Chaco being upwards of 6000 feet high. The Blue Mountains, in Jamaica, vary from 5000 to 6000 feet; in Porto Rico the height does not exceed 4000 feet; while many of the Lesser Antilles rise to elevations of between 4000 and 5000 feet. The majority of the islands are of volcanic origin, but many are of coralline formation, or consist of layers of volcanic matter alternating with coralline rock. Volcanic action is now confined to the Windward Isles, from Grenada to St Eustasius, Mount Garou in St Vincent being an active volcano, from which considerable eruptions have occurred in modern times; sulphurous vapour and sparks of fire are emitted by the Souffrière of Guadeloupe; while many others have vomited ashes and lava within the historical period. St Domingo and Jamaica have repeatedly been the scenes of some of the most tremendous earthquakes on record.

Climate.—With exception of the northern Bahamas, which lie beyond the tropic of Cancer, the entire West Indian Archipelago is situated in the torrid zone. The heat is consequently very great on the lower grounds, where, however, it is tempered by the sea-breezes, which generally blow in the afternoon, when their cooling agency is most needed. In the elevated regions of the larger islands the temperature is usually cool and delightfully pleasant.

Snow is never known to fall, but slight frosts occasionally occur in the mountainous districts of Cuba. The mean annual temperature at Havannah is 71°.17 Fah.; mean winter, 73°; mean summer, 81½°. When the sun is in the southern hemisphere, the Archipelago enjoys the benefit of the trade-winds, blowing from N.E. and E.N.E., and diffusing over it a refreshing coolness; but when the sun has passed the equator, the trade-winds retire northward and are replaced by south-eastern winds, which are warm and gentle. The year is divided into two seasons—the dry and wet. All the islands south of the 18th parallel have two dry and two wet seasons, and this is also the case with the southern shores of Jamaica, Haiti, and Porto Rico. The long dry season sets in about the end of November and continues till the beginning of March, during which time the sky is cloudless for several weeks and even months in succession. The short rainy season then begins, which in the southern islands lasts about six weeks, but in the northern only fifteen or twenty days. When the sun passes over the zenith of the islands, the short dry season begins, and it lasts till the sun has reached the northern tropic. The long rainy season commences in July and continues till the month of November, when the rain falls in torrents, but rarely lasts for many hours continuously. It is ushered in by violent gusts of wind accompanied by terrific thunder-storms, and during their continuance the destructive yellow fever and other diseases are prevalent.

Minerals.—The copper mines of Cuba form an invaluable source of revenue to the Spanish crown. The quantity of copper exported in 1844 represented a sixth part of that of the globe; gold, silver, alum, copperas, and other useful minerals, are found in considerable quantity; while mines of excellent coal have been discovered. Gold, silver, copper, tin, iron, and rock-salt are found in Haiti, but the mines are now unproductive. In Jamaica no metal is known to exist, except lead and copper, both of which are now being mined with advantage; besides which there are some salt springs. Porto Rico contains some gold, copper, iron, lead, and coal, but no mines have been wrought until very recently. The mineral products of the smaller islands are unimportant. Salt is plentiful in the Bahama Islands, and asphalt in Trinidad.

Botany.—The West Indian Islands form the 19th phyto-geographic region of botanists. The flora is intermediate between that of Mexico and Central America on the one hand, and of Colombia and Guiana on the other; from both of which, however, it is distinguished by its great quantity of ferns and orchidaceous plants.

Among the principal articles which the Archipelago supplies to the commerce of the world are coffee and sugar (both of which were introduced by Europeans), cotton, tobacco, cigars, and pimento or Jamaica pepper. Other articles of less importance are indigo, ginger, arnotto, aloes, sassafras, cochineal, logwood, and various other medicinal plants and dye-woods; together with mahogany, lignum-vitæ, and other trees whose woods are susceptible of the finest polish. The fruits are numerous and highly luxuriant, comprising the pine-apple, cocoa-nut, pomegranate, mango, guava, orange, bread-fruit, and banana. Maize, or Indian corn, is extensively grown throughout the Archipelago, forming the main staple of food; the cultivation of rice is much more limited, and is confined to some of the islands.

Zoology.—The wild animals which existed in the Archipelago when the Spaniards first arrived were, the agouti, peccary, racoon, alco or native Indian dog, and the wild-boar.

These are now all extinct, or nearly so, with the exception of the wild hog, which is still common on most of the islands. Monkeys are also still found on several islands. The birds are numerous, and nearly all fit for food: the most remarkable are the humming-bird and the carrion-crow. Without the last-mentioned bird, it is said that these islands would hardly be habitable. Reptiles abound, embracing turtles, lizards, and snakes. Fish are abundant and excellent; in Jamaica alone 24 species are enumerated, all of which are fit for food. The Archipelago swarms with insects, the most troublesome of which are mosquitoes, cockroaches, and ants.

Ethnography.—At the time of their discovery, the southern islands were inhabited by the fierce and warlike Caribs; the more northern by a gentler race, the Arrowauks. Both these nations have long been extinct, with the exception of a few families of Caribs in the islands of St Vincent and Trinidad.

The indiscriminate and wholesale butchery of the natives will ever remain an indelible stigma on the Spanish name. Cuba and Hispaniola were discovered by Columbus in 1492; the first settlement of the Spaniards in Cuba took place in 1511; and in less than half a century afterwards, the aborigines, who are supposed to have amounted to at least 1,500,000 persons, had become extinct. The inhabitants of Hispaniola, estimated at 1,000,000, were, in like manner, reduced, in the first fifteen years after the arrival of the Spaniards, to 60,000, and in nine years more to 14,000. The present population, amounting to upwards of three millions and a half, consists of three classes—whites, negroes, and mulattoes. In Cuba and Porto Rico the negroes constitute about one-half of the entire population, in the British islands about three-fourths, and in the others about two-thirds. The descendants of white parents born in the West Indies are termed Creoles, those of mixed parentage, Mulattoes. The negroes were introduced as slaves from Africa, but slavery is now abolished in all the islands, except Cuba, which now enjoys the unenviable distinction of being the only civilised country in the world which directly and avowedly carries on the slave trade in all its horrors. Slavery was abolished in the colonial possessions of Great Britain in 1834, when the British Parliament voted for the liberation of the negroes no less a sum than twenty million pounds sterling—a sum unparalleled for such a purpose in the annals of our race.

LANGUAGE AND RELIGION.—The languages principally spoken in the West Indies are Spanish, French, and English—Spanish in Cuba and Porto Rico, French in Haiti and most of the French possessions, English in Jamaica and the other islands belonging to Britain. The Roman Catholic is the most prevalent religion, but Episcopacy is established in the British colonies. The negroes and mixed races in the several islands generally speak the language and profess the religion of the white race dominant in each. In Trinidad, however, there exists a Mohammedan negro community, the only one in connection with the western world.

EDUCATION AND GOVERNMENT.—Education is at a very low ebb in the West Indies, not excepting the British possessions, most of the opulent persons in which send their children to be educated in the mother-country. Codrington College, in Barbadoes, is a thriving institution, and the most important educational establishment in the Archipelago. Hayti was formerly held partly by France and partly by Spain; but about the beginning of the present century an insurrection of the black population took place, which resulted in their complete independence. There are now two native governments, both republican: one named Dominica, consisting of the Spanish part of the island; and the other Haiti, of the French part. Cuba and Porto Rico are each governed by a Captain-General appointed by the Spanish Crown. The government of the French possessions is conducted by a Governor and Colonial Council of French residents; that of the Dutch is vested in a Stadtholder, assisted by a Civil and Military Council. The government of Jamaica is vested in a Governor and a Council of 12 members, nominated by the Crown, and a Legislative Assembly of 45 members, who are elected by all male inhabitants possessed of freehold property to the value of ten pounds a-year. The Bahamas, Bermudas, and each of the other British islands, have a representative government constituted after the model of that of Jamaica.

The STAPLE PRODUCTIONS of the West Indies are sugar, rum, molasses, and coffee (see under "Botany"). The cultivation of the soil is entirely performed by the negro population, who alone are capable of enduring the intense heat of the lower grounds. The amount of sugar and other articles of export from the British West Indies is greatly less than it was prior to the emancipation of the blacks, and very many of the planters, formerly employing slave labour, have been ruined. The principal causes that have led to this disastrous result are the unwillingness of the free negroes to engage actively in agricultural labour, and the low price of sugar, arising from the unequal competition of the slaveholding planters of Cuba and Porto Rico.

BERMUDAS.

The Bermudas or Somers Islands, 600 miles E. of South Carolina, and about 900 miles N.E. of the Bahamas, consist of a group of about 300 small islets and rocks belonging to Britain, lat. 32° 20′ N., lon. 64° 50′ W. The largest, named Long Island, is only 180 feet above the sea, while most of the others are scarcely raised above the water. Area about 22 square miles; population, 11,000.

They are of coralline formation, contain neither springs nor streams; but the soil is fertile, climate mild and salubrious, and the fruits of both tropical and temperate regions are raised in great abundance. The culture of the orange is extending; the arrow-root is considered of excellent quality; and these, together with cacao, potatoes, onions, palmetto, and straw hats, form the principal exports. The imports consist of lumber, ships' stores, provisions, and articles of British manufacture. The principal employments of the inhabitants consist of the cultivation of the soil, the building of small vessels engaged in the transit trade between Newfoundland, Halifax, and the West Indies, and in the whale fishery. More than half of the inhabitants are blacks and people of mixed colour. Hamilton, the capital, situated on Long Island, and St George, on an island of the same name, are the only towns in the group. The Bermudas are chiefly serviceable as a naval station and penal settlement. On the island Ireland, which is strongly fortified, and one of the most important naval stations in the British colonies, an extensive dockyard has been constructed. They were discovered by Juan Bermudez, a Spanish navigator, in 1522; the first settlement was made on them in 1612, since which they have remained in the possession of England.

SOUTH AMERICA.

1. **Boundaries.**—N., the Caribbean Sea; W., Central America and the Pacific Ocean; S., the Antarctic Ocean; E. and N.E., the Atlantic.

Extending from 11° 20′ N. to 55° 58′ S. lat., and from 35° to 81¼° W. lon., South America embraces 67 degrees of lat., and 46½ of lon. Point Gallinas, its northern extremity, is on the same parallel with Capes Roxo and Guardafui in Africa, the cities Aden, Madras, and Bankok in Asia, and Leon in Central America; while its central point (lat. 22° S., lon. 58° W.), is in the same latitude with Lake Ngami in S. Africa, N.W. Cape in Australia, and Tarija in Bolivia, and in the same longitude with the S.W. extremity of Newfoundland, the island Barbadoes, and the cities George Town and Buenos Ayres.

2. **Form, Dimensions, and Coast Line.**—In form, this continent bears a striking resemblance both to Africa and North America, being like them pear-shaped, with the narrow extremity directed towards the south.

As the former is united at its N.E. extremity to the main continent of the Old World, the latter is in like manner united at its N.W. extremity to the main continent of the New World. Like Africa, it is divided very unequally by the equator, and has its northern shores washed by an inland sea; like N. America, it is pervaded through its entire extent by an enormous mountain-chain, situated near its western shores; the Alleghanies in the one continent harmonise with the Brazilian chain in the other; while the basins of the St Lawrence and Mississippi in the northern continent, correspond with the Amazon and La Plata in the southern (see p. 15-18). From Cape Gallinas, its most northern, to Cape Froward, its most southern extremity, the extreme length is about 4500 miles; and from Cape Branco, its most eastern point, to Cape Parina, its most western, the maximum breadth is about 3000 miles. The coast-line is estimated at upwards of 12,000 miles, being only one-half of that of N. America; but this deficiency of seaboard is in a great measure compensated for by the great number of large rivers, which are in general navigable nearly to their sources.

3. **Area and Population.**—The area of South America is usually estimated at 7,000,000 square miles, and the population at about 18,447,000; but the aggregate area of the different states, as exhibited in the following table, is 7,980,720 square miles, and the aggregate population, 20,262,818. This area is double that of Europe, while the population is only equal to that of England and Wales in 1860.

TABLE OF SOUTH AMERICAN STATES.

Name and Position.	Area in Eng. Square Miles.	Population at last Census.	Capital.	River, &c., on which the Capital is situated.	Population of Capital.
Colombia, in the N.W. of the continent, comprising—					
The Granadian Confederation, E. of Costa Rica,	521,948	2,363,054	Bogotá.	San Francisco.	40,000
Venezuela, E. of Granadian Confederation,	426,712	945,408	Caraccas.	n. N. Coast.	50,000
Ecuador, S. of Granadian Confederation,	325,000	665,000	Quito.	Esmeraldas.	76,000
Guiana, E. of Colombia, embracing—					
British Guiana, E. of Venezuela,	76,000	163,000	George Town.	Demerara.	126,000
Dutch Guiana, E. of British Guiana,	38,500	60,000	Paramaribo.	Surinam.	20,000
French Guiana, E. of Dutch Guiana,	27,560	22,010	Cayenne.	P. Cayenne.	5,000
Brazil, S. of Guiana,	3,956,000	7,677,800	Rio de Janeiro.	E. Coast.	296,000
Peru, S. of Ecuador,	523,500	2,200,000	Lima.	Rimac.	70,000
Bolivia, S.E. of Peru,	316,000	2,326,126	Chuquisaca.	n. Pilcomayo.	20,000
Chile, S.W. of Bolivia,	143,500	1,439,120	Santiago.	Mapocho.	80,000
La Plata, or the Argentine Confederation, including Buenos Ayres, E. of Chile,	1,120,000	1,224,000	Buenos Ayres.	Rio de la Plata.	122,000
Paraguay, N.E. of La Plata,	86,000	600,000	Asuncion.	Paraguay.	25,000
Uruguay, or Banda Oriental, S. of Brazil,	120,000	177,300	Monte Video.	Rio de la Plata.	35,000
Patagonia, S. of La Plata,	300,000?	400,000?	Puntas Arenas.	Strait of Magellan.	

4. **Political Divisions.**—The preceding table exhibits the names, areas, population, capitals, &c., of the different political divisions of this continent. The total number of existing states amounts to thirty-three; but if we regard the Granadian Confederation and La Plata as one state each, the number will be reduced to fourteen. With the exception of Brazil and Guiana, all these have adopted the republican form of government; and it is a remarkable fact, that while all the colonial possessions of Portugal contained in this continent have been kept entire in the form of an empire, enjoying the blessings of a stable government, those of Spain have fallen asunder into numerous republics, which are in a state of chronic revolution.

5. **Surface.**—The Andes, a vast mountain-chain, with its plateaus and declivities, stretch along the western coast from the Isthmus of Panamá to Cape Horn, dividing the continent into two unequal slopes, and covering nearly a sixth part of the entire area.

The remainder of the surface consists, for the most part, of three immense plains, watered respectively by the Orinoco, Marañon, and La Plata. The first of these, named the *Llanos*, is bounded on the N. by the Parimé, a cordillera of the Andes; and on the S. by the Sierras that divide Colombia from Brazil. It is one of the most level portions of the earth's surface, having, at a distance of 450 miles from the ocean, an elevation of only 192 feet. The basins of the Marañon and La Plata, lying south of it, are enclosed between the Andes on the west, and the Brazilian mountains on the east. The former of these is the largest river-basin in the world, having an area of a million and a half square miles. It is separated from the basin of the Orinoco by an undulation so low that the Rio Negro, one of its principal tributaries, sends off a branch, named the Casiquiari, to meet the Orinoco —the two basins thus merging into one another; while the Madeira, another of its tributaries, rises only a few miles distant from the head-waters of the Paraguay, which finds its way southward to the La Plata, both affluents being navigable to their sources. These three vast river-basins are thus virtually interlocked, and a mighty circle of inland navigation, which is without a parallel in any other part of the globe, is established by natural means.

6. **Isthmus and Peninsulas.**—Isthmus of Panamá, uniting Southern with Central America; Peninsula of Paraguana, N.W. of Venezuela; Peninsulas of Tres Montes and St Josef, on the W. and E. sides of Patagonia.

7. **Capes.**—St Francisco, W. of Ecuador; Blanco or Parina, and Aguja Point, N.W. of Peru; Froward, the most S. point of the American continent; Horn, the southernmost extremity of the New World, S. of Tierra del Fuego; Corrientes and St Antonio, E. of Buenos Ayres; St Maria, E. of Uruguay; Frio, St Thome, and St Roque, E. of Brazil; Branco (lon. 35° W.), the most easterly point of America; Do Norte, N. of Brazil; Point Gallinas, the northernmost point of South America, N.E. of New Granada.

8. **Islands.**—The Galapagos group, W. of Ecuador; Chincha Islands, W. of Peru; Felix, Masafuera, and Juan Fernandez, W. of Chile; Chilöe, Wellington, and Madre de Dios Archipelago, W. of Patagonia; the Fuegian Archipelago (Tierra del Fuego, K. Charles' South Land, Staten Island, Desolation Land, &c.), S. of Patagonia; Falkland Isles and South Georgia, S.E. of Patagonia; the Venezuelan Archipelago, including Margarita, Tortuga, Buen Ayre, and Curaçoa, N. of Venezuela.

The *Galapagos*—so called by the Spaniards because they abound in *turtles*—are a group of islands situated under the equator, 730 miles W. of Ecuador. They are thirteen in number, are all volcanic, generally sterile, and for the most part uninhabited, except Albemarle Island, the largest in the Archipelago, which is 60 miles long, 15 broad, and attains an elevation of 4000 feet. The flora and fauna are to a large extent peculiar, especially the birds and reptiles. The *Chinca Islands*, with their rich deposits of excellent guano, constitute a mine of wealth to the Peruvian Government. *Juan Fernandez*, a small volcanic island belonging to Chile, is famous as having formed the scene of De Foe's well-known tale of Robinson Crusoe. *Tierra del Fuego* ("land of fire"), so named from the volcanoes with which it abounds, consists of a cluster of islands off the S. coast of Patagonia, from which it is separated by the Strait of Magellan. Some of the islands are level and pretty well wooded, producing birches and evergreens. Foxes and guanacoes are the principal animals. The inhabitants, who subsist by fishing and hunting, are among the lowest in the scale of humanity. *Falkland Isles*, a group of about two hundred small islands, belonging to Great Britain, in the South Atlantic Ocean, about 300 miles N.E. of Tierra del Fuego. The two largest islands are West Falkland and East Falkland, the latter of which is nearly 100 miles long, with an area of 5000 square miles. The area of the whole group is estimated at 13,000 square miles: population about 500, consisting chiefly of British colonists from Buenos Ayres, and a few Indians. The lower grounds are of silurian formation, the higher of quartz rock. The soil is poor, consisting mainly of peat: the climate is temperate and healthy. There are no trees, but shrubs are numerous, and the tussac grass attains a great height. Some vegetables are raised, but little or no corn, and the whole group is better adapted for pasture than agricultural purposes. The only native quadruped is a species of fox; but in East Falkland wild oxen and horses are numerous; while sea-fowl are the prevailing birds, and fish, seals, and whales are numerous in the adjacent seas. Vessels passing round Cape Horn, and whaling ships frequenting the South Seas, are here supplied with provisions and fresh water. The value of the exports in 1854 amounted to £18,600. Port Louis, capital *South Georgia*, about 1000 miles E. of Tierra del Fuego, is a bleak and barren region traversed by lofty mountains which are constantly covered with snow—the heat of summer being sufficient only to melt the snow on the low grounds of the N.E. side. The coasts are high and rocky, possessing a number of bays and harbours, which are encumbered with ice during a great part of the year. The island is about 90 miles long, with a considerable breadth. The neighbouring seas abound with seals, and sea-fowl in great numbers frequent the coasts.

9. **Bays, Gulfs, and Straits.**—Bay of Panamá and Gulf of Guayaquil, W. of Columbia; Pisagua Bay, S.W. of Peru; Strait of Magellan, between Patagonia and Tierra del Fuego; Strait of Le Maire, between Tierra del Fuego and Staten Island; Gulfs of St George and San Matias, E. of Patagonia; Bahia Blanca, S. of Buenos Ayres; Estuary of Rio de la Plata, between Buenos Ayres and Banda Oriental; All Saints' Bay, E. of Brazil; Rio Pará and Estuary of the Amazon, N.E. of Brazil; Gulfs of Parta, Venezuela, and Darien, N. of Colombia.

10. **Mountain Systems.**—This continent is traversed in the direction of its greatest length by the Andes* (in Spanish, *Cordillera de los Andes*), in some respects the most magnificent chain of mountains on the earth's surface.

Commencing at the Isthmus of Panamá and the Caribbean Sea, it extends along the Pacific coast of the continent to its southern extremity, being a total length of about 4500 miles, with a breadth varying from 40 to 400 miles. Though greatly inferior in elevation to the Himalaya, it far surpasses the latter in length and in the extent of surface which it occupies, and constitutes the great feature in the physical geography of South America. In some places the chain forms only one ridge, as between Cape Horn and the 20th degree of S. latitude, while in others there are two or more parallel ridges, supporting between them highly elevated table-lands. In general they present a very steep slope towards the Pacific coast, to which they maintain a parallel direction at an average distance of from 20 to 160 miles. No other chain on the earth's surface can vie with the

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* Probably derived from *anda* (Span. a *step*); but possibly from *anta*, the Peruvian name for metal, the chain being in many places highly metalliferous.

4. **Political Divisions.**—The preceding table exhibits the names, areas, population, capitals, &c., of the different political divisions of this continent. The total number of existing states amounts to thirty-three; but if we regard the Granadian Confederation and La Plata as one state each, the number will be reduced to fourteen. With the exception of Brazil and Guiana, all these have adopted the republican form of government; and it is a remarkable fact, that while all the colonial possessions of Portugal contained in this continent have been kept entire in the form of an empire, enjoying the blessings of a stable government, those of Spain have fallen asunder into numerous republics, which are in a state of chronic revolution.

5. **Surface.**—The Andes, a vast mountain-chain, with its plateaus and declivities, stretch along the western coast from the Isthmus of Panamá to Cape Horn, dividing the continent into two unequal slopes, and covering nearly a sixth part of the entire area.

The remainder of the surface consists, for the most part, of three immense plains, watered respectively by the Orinoco, Marañon, and La Plata. The first of these, named the *Llanos*, is bounded on the N. by the Parimé, a cordillera of the Andes; and on the S. by the Sierras that divide Colombia from Brazil. It is one of the most level portions of the earth's surface, having, at a distance of 450 miles from the ocean, an elevation of only 192 feet. The basins of the Marañon and La Plata, lying south of it, are enclosed between the Andes on the west, and the Brazilian mountains on the east. The former of these is the largest river-basin in the world, having an area of a million and a half square miles. It is separated from the basin of the Orinoco by an undulation so low that the Rio Negro, one of its principal tributaries, sends off a branch, named the Casiquiari, to meet the Orinoco—the two basins thus merging into one another; while the Madeira, another of its tributaries, rises only a few miles distant from the head-waters of the Paraguay, which finds its way southward to the La Plata, both affluents being navigable to their sources. These three vast river-basins are thus virtually interlocked, and a mighty circle of inland navigation, which is without a parallel in any other part of the globe, is established by natural means.

6. **Isthmus and Peninsulas.**—Isthmus of Panamá, uniting Southern with Central America; Peninsula of Paraguana, N.W. of Venezuela; Peninsulas of Tres Montes and St Josef, on the W. and E. sides of Patagonia.

7. **Capes.**—St Francisco, W. of Ecuador; Blanco or Parina, and Aguja Point, N.W. of Peru; Froward, the most S. point of the American continent; Horn, the southernmost extremity of the New World, S. of Tierra del Fuego; Corrientes and St Antonio, E. of Buenos Ayres; St Maria, E. of Uruguay; Frio, St Thome, and St Roque, E. of Brazil; Branco (lon. 35° W.), the most easterly point of America; Do Norte, N. of Brazil; Point Gallinas, the northernmost point of South America, N.E. of New Granada.

8. **Islands.**—The Galapagos group, W. of Ecuador; Chincha Islands, W. of Peru; Felix, Masafuera, and Juan Fernandez, W. of Chile; Chiloë, Wellington, and Madre de Dios Archipelago, W. of Patagonia; the Fuegian Archipelago (Tierra del Fuego, K. Charles' South Land, Staten Island, Desolation Land, &c.), S. of Patagonia; Falkland Isles and South Georgia, S.E. of Patagonia; the Venezuelan Archipelago, including Margarita, Tortuga, Buen Ayre, and Curaçoa, N. of Venezuela.

The *Galapagos*—so called by the Spaniards because they abound in *turtles*—are a group of islands situated under the equator, 730 miles W. of Ecuador. They are thirteen in number, are all volcanic, generally sterile, and for the most part uninhabited, except Albemarle Island, the largest in the Archipelago, which is 60 miles long, 15 broad, and attains an elevation of 4000 feet. The flora and fauna are to a large extent peculiar, especially the birds and reptiles. The *Chinca Islands*, with their rich deposits of excellent guano, constitute a mine of wealth to the Peruvian Government. *Juan Fernandez*, a small volcanic island belonging to Chile, is famous as having formed the scene of De Foe's well-known tale of Robinson Crusoe. *Tierra del Fuego* ("land of fire"), so named from the volcanoes with which it abounds, consists of a cluster of islands off the S. coast of Patagonia, from which it is separated by the Strait of Magellan. Some of the islands are level and pretty well wooded, producing birches and evergreens. Foxes and guanacoes are the principal animals. The inhabitants, who subsist by fishing and hunting, are among the lowest in the scale of humanity. *Falkland Isles*, a group of about two hundred small islands, belonging to Great Britain, in the South Atlantic Ocean, about 300 miles N.E. of Tierra del Fuego. The two largest islands are West Falkland and East Falkland, the latter of which is nearly 100 miles long, with an area of 5000 square miles. The area of the whole group is estimated at 13,000 square miles : population about 500, consisting chiefly of British colonists from Buenos Ayres, and a few Indians. The lower grounds are of silurian formation, the higher of quartz rock. The soil is poor, consisting mainly of peat : the climate is temperate and healthy. There are no trees, but shrubs are numerous, and the tussac grass attains a great height. Some vegetables are raised, but little or no corn, and the whole group is better adapted for pasture than agricultural purposes. The only native quadruped is a species of fox ; but in East Falkland wild oxen and horses are numerous ; while sea-fowl are the prevailing birds, and fish, seals, and whales are numerous in the adjacent seas. Vessels passing round Cape Horn, and whaling ships frequenting the South Seas, are here supplied with provisions and fresh water. The value of the exports in 1854 amounted to £18,600. Port Louis, capital *South Georgia*, about 1000 miles E. of Tierra del Fuego, is a bleak and barren region traversed by lofty mountains which are constantly covered with snow—the heat of summer being sufficient only to melt the snow on the low grounds of the N.E. side. The coasts are high and rocky, possessing a number of bays and harbours, which are encumbered with ice during a great part of the year. The island is about 90 miles long, with a considerable breadth. The neighbouring seas abound with seals, and sea-fowl in great numbers frequent the coasts.

9. **Bays, Gulfs, and Straits.**—Bay of Panamá and Gulf of Guayaquil, W. of Columbia; Pisagua Bay, S.W. of Peru; Strait of Magellan, between Patagonia and Tierra del Fuego ; Strait of Le Maire, between Tierra del Fuego and Staten Island; Gulfs of St George and San Matias, E. of Patagonia ; Bahia Blanca, S. of Buenos Ayres ; Estuary of Rio de la Plata, between Buenos Ayres and Banda Oriental ; All Saints' Bay, E. of Brazil; Rio Pará and Estuary of the Amazon, N.E. of Brazil; Gulfs of Parta, Venezuela, and Darien, N. of Colombia.

10. **Mountain Systems.**—This continent is traversed in the direction of its greatest length by the Andes* (in Spanish, *Cordillera de los Andes*), in some respects the most magnificent chain of mountains on the earth's surface.

Commencing at the Isthmus of Panamá and the Caribbean Sea, it extends along the Pacific coast of the continent to its southern extremity, being a total length of about 4500 miles, with a breadth varying from 40 to 400 miles. Though greatly inferior in elevation to the Himalaya, it far surpasses the latter in length and in the extent of surface which it occupies, and constitutes the great feature in the physical geography of South America. In some places the chain forms only one ridge, as between Cape Horn and the 20th degree of S. latitude, while in others there are two or more parallel ridges, supporting between them highly elevated table-lands. In general they present a very steep slope towards the Pacific coast, to which they maintain a parallel direction at an average distance of from 20 to 160 miles. No other chain on the earth's surface can vie with the

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Andes in the number and grandeur of its volcanoes. These are especially numerous in Chile, where there are no fewer than nineteen in a state of activity; while the mountains of Ecuador consist almost exclusively of volcanic summits, either now or formerly in active ignition. Of these the most dreaded is Cotopaxi. In some of its eruptions flames rise 3000 feet above the edge of its crater, and the sound of its explosions has been heard at a distance of 550 miles. The Andes are chiefly composed of greenstone, porphyry, basalt, granite, gneiss, mica, and clay-slate, with limestone, red sandstone, and conglomerate. Coal is found at great elevations, while salt and gypsum are abundant. Granite seems to be the base of the whole, though it rarely appears at the surface. Volcanic products, such as lava, tufa, and obsidian, are found in immense quantities on the western slope, but never on the eastern. Fossil remains are by no means common, but silurian shells are sometimes found in Bolivia at an elevation of 17,500 feet. It is customary to divide this immense chain into five sections, which are named after the countries in which they are situated.

1. THE COLOMBIAN ANDES, or the ANDES OF QUITO, extend in three parallel ranges from the Caribbean Sea to the 5th degree of S. latitude. They embrace the table-land of Quito, 9600 feet in elevation, and flanked by some of the most majestic volcanoes in existence. The highest mountain in this portion of the chain is Chimborazo, long considered the culminating point of the Andes, and the loftiest summit of the earth's surface. It is cone-shaped, and covered with perpetual snow. It was ascended by Humboldt in June 1802 to an elevation of 19,286 feet, and again by Boussingault and Hall in 1831 to 19,695 feet. Proceeding from N. to S., the following are the loftiest summits of the Colombian Andes—those preceded by an asterisk being active volcanoes:—Horqueta, in N. of New Granada, 19,184 feet; * Tolima, in central chain, lat. 5° N., 18,020 feet; * Pichinca, on the equator, 15,924 feet; *Antisana, 35 miles S.E. of Quito, 19,132 feet; * Cotopaxi, 34 miles S.S.E. of Quito, 18,875 feet; Chimborazo, 1° 30′ S., 21,424 feet. Height of snow-line in Andes of Quito, 15,800 feet. 2. ANDES OF PERU, extending in three parallel ranges from lat. 5° to 14° S.—the western range, which is separated from the Pacific by a sandy desert 120 miles broad, being the loftiest: Knot of Huanuco and Pasco, lat. 10° S., 11,800 feet; Nevada de Sasaguanca, N.E. of Lima, 17,904 feet; Vilcanota, lat. 14°, 17,525 feet. 3. ANDES OF BOLIVIA, forming the central and most elevated portion of the system (though not embracing the very highest summit), extend in two gigantic longitudinal ridges from lat. 14° to 21° S. The two ranges, which are of nearly equal elevation, form the boundary walls of the table-land of Desaguadero, elevated 13,000 feet above the sea, extending 500 miles in length, from 30 to 60 miles in breadth, and enclosing Lake Titicaca, 12,846 feet high. *Western Range.*—Chuquibamba, 15 miles N.W. Arequipa, 21,000 feet; * Volcano of Arequipa, lat. 17° S., 20,320 feet; * Gualatieri, lat. 18° 23′ S., 21,960 feet; Sahama, lat. 18°, 22,350 feet. *Eastern Range.*—Ancohuma or Sorata, 65 miles N. of La Paz, 21,286 feet; Illimani, lat. 16° 40′ S., 21,140 feet; Cochabamba, lat. 17° 21′ S., 17,073 feet; Cerro de Potosi, 16,152 feet. Height of snow-line, from 15,900 to upwards of 18,000 feet. 4. ANDES OF CHILE, extending in one mighty ridge from lat. 21° to 42° S., though of inferior average elevation to the Andes of Bolivia, contain Aconcagua, the culminating point of the entire chain, and of the New World. The volcanoes in this part of the chain are numerous, and are in general in a state of activity.—Aconcagua, lat. 32° 38′, 23,910 feet; Tupungata, lat. 34°, 15,000 feet; * Volcano of Chillan, lat. 36° 5′, 16,000 feet; * Villarica, lat. 39° 10′, 16,000 feet. Height of snow-line in the S., 8600 feet. 5. ANDES OF PATAGONIA, extending in one range from lat. 42° to Cape Horn, are of comparatively moderate elevation. The snow-line descends here to 3000 feet, and glaciers make their appearance, though unknown in the rest of the Andes.—* Minchinmadiva, lat. 42° 48′ S., 8000 feet; * Yanteles, lat. 43° 30′, 8030 feet; Mount Stokes, lat. 50°, 6400 feet; Mount Darwin, Tierra del Fuego, 6800 feet; Cape Horn, 300 feet. For the other mountain ranges of South America, see under "Guiana" and "Brazil."

11. **River Basins and Capitals.**—With exception of the Desaguadero, which flows from Lake Titicaca into Lake Uros, in the basin of continental streams, all the rivers of South America belong to one or other of three oceanic basins—those of the Pacific, Atlantic, and American Mediterranean.

The rivers flowing into the Pacific are mere mountain torrents; the Magdalena is the only one of importance that finds its way to the Caribbean Sea; but those inclining to the Atlantic comprise the most gigantic rivers on the earth's surface. Of these, by far the largest is the Amazon, Marañon, or Orellana, formed by the union of the Tungaragua and Ucayali, the former of which rises in Lake Lauricocha among the loftiest of the Peruvian Andes. The direct length of the Amazon from the source of the Apurimac, an affluent of the Ucayali, to the ocean, is 1769 miles, and including its windings, nearly 4000 miles. It is navigable for large vessels from its mouth to the influx of the Ucayali, and for small craft to the very foot of the mountains, while twenty great rivers, all navigable to their sources, discharge their contents into its stream—thus affording an immense inland navigation of about 50,000 miles, and draining an area variously estimated from 1,500,000 to 2,000,000 square miles. In short, whether regarded as to its length, volume of water, or the extent of its basin, the Amazon is not only the largest river in South America, but considerably eclipses every other river on the globe. For 450 miles above its mouth it is hardly possible to discern the opposite bank, the width of the stream being here nowhere less than four miles. It flows with a very strong, rapid current, facilitating the navigation downwards, while the obstacle this offers to the ascent is relieved by the prevailing wind, which is uniformly contrary to the course of the stream. Like the great rivers of Africa, the waters of the Amazon and Orinoco are subject to a periodic rise, caused by the great fall of rain during the wet season.

RIVER BASIN.	Length of Basin in Eng. Miles.	Area in Geographical Square Miles.	CAPITALS OF STATES AND PROVINCES.
Magdalena, ...	700	72,000	BOGOTÁ (Granadian Confederation), ANTIOQUIA, TUNJA (Boyaca), POPAYAN (Cauca), MOMPOX (Magdalena).
Orinoco, ...	1000	252,000	Angostura, Varinas (Orinoco).
Essequibo, ...	400	61,650	GEORGE TOWN (British Guiana).
Amazon, ...	2100	1,512,000	Manaos or Barra (Rio Negro), La Paz, Exaltacion (Beni), Santa Cruz, Cochabamba.
Tocantins, ...	1260	284,480	Pará, Goyaz.
Paranahyba, ...	650	115,200	Oeiras (Piauhi).
S. Francisco, ...	900	187,200	Macayo (Alagoas), Sergipe, Ouro-Preto (Minas Geraes).
Rio de la Plata, ...	1600	886,400	MONTE VIDEO (Banda Oriental), BUENOS AYRES, Paraná (Entre Rios), Santa Fé, Corrientes, Assuncion (Paraguay), La Cruz (Corrientes), San Luis, Cordova, Santiago, Tucuman, Catamarca, Salta, CHUQUISACA (Bolivia), Tarija, Potosi, Cuyaba (Matto Grosso).

12. **Lakes.**—There are very few permanent lakes of any magnitude in S. America, while those which exist are in general unconnected with the larger river basins.

On the table-land of Bolivia, at an elevation of 12,847 feet, is Lake *Titicaca,* next to Sir-i-Kol, in Bokhára, the highest lake in the globe, with an area of nearly 4000 square miles. It is drained by the Desaguadero, which carries its surplus waters to Lake *Uros,* a smaller sheet of salt water about 200 miles to the S.E. Lake *Maracaybo,* in the N.W. of Venezuela, has an area of about 5000 square miles, and is connected with the sea by a narrow channel 12 miles long. The small lake of *Amucu,* in Guiana, and in the basin of the

Parima, an affluent of the Rio Negro, expands in the rainy season to the dimensions of an inland sea. Lake *Dos Patos*, in the S.E. of Brazil, 5000 square miles, discharges its waters into the Atlantic by a channel named Rio Grande do Sul, and receives from the south the waters of Lake Mirim in Uruguay. Between Bolivia and Brazil, in the upper basin of the Paraguay, is the immense swamp of *Oberava* or *Xarayes*, extending during the rainy season to a distance of about 100 miles from the bed of the river. There are numerons lakes in La Plata, between the Andes and the river Paraná, the chief of which are *Guanacache*, *Silverio*, *Bevedero*, *Urre-lauguen*, and *Porongos*, most of which are intensely salt. Lake *Cologuape*, in Patagonia, is drained by the Desire; while the lakes of Chile, though somewhat numerous, are all of inferior dimensions.

13. **Climate.**—With two-thirds of its area situated between tho tropics, the climate of South America is necessarily very hot. Though yielding in this respect to Africa, the corresponding continent of the Old World, the temperature is considerably higher than that of North America; for while the latter has its maximum breadth in the arctic regions, the latter attains its greatest width in the torrid zone.

The highest mean temperature occurs in the northern parts of Granada and Venezuela, which is enclosed within the isothermal line of 81° Fah., while at Massouah, in Abyssinia, the mean temperature exceeds 87° (see pp. 533, 580). This great difference is no doubt chiefly owing to the greater humidity of South America, its vast forests, the absence of sandy deserts, the influence of the trade winds, and the freer access to its shores of the great oceans of the globe. In contradistinction to the other great divisions of the land, the western shores of this continent are considerably colder than the eastern, owing to the low temperature of the Antarctic Drift Current, or Humboldt's Current, which, setting out from the Antarctic Ocean, flows north-eastward against the shores of Chile, then northward along the coast to the vicinity of the equator. Opposite Lima, on the Peruvian coast, the temperature of this current is no less than 14° Fah. below that of the neighbouring ocean (see p. 22). For the mean annual, mean winter, and mean summer temperatures of various places in this continent, we refer the reader to p. 37. South America is also characterised by great moisture, which attains its maximum in the extreme north, where the temperature is highest, but which is everywhere more copious on the eastern than on the western side of the Andes. Within the tropics the wide plains on the east are deluged by the heavy periodical rains from November to May, while the narrow margin between the Cordilleras and the Pacific is almost entirely rainless. In some places the deposition of moisture is surprisingly great; for while in the tropical regions of the New World generally it amounts to 115 inches, on the north coast of Dutch Guiana 229 inches fall annually; and in some places on the east coast of Brazil no less than 276 inches have been observed. This astonishing quantity falls, moreover, in a comparatively brief period. At Cayenne, for example, in French Guiana, 21 inches of rain have been known to fall in a single day. As the rainy season, however, is confined to a brief period, the number of clear days is much more considerable than in our temperate climates; while during the long-continued drought that precedes it, the ground is parched, the sun glares with intense radiance, and the wild animals, tormented alike by hunger and thirst, perish in great numbers.

14. **Geology.**—The geological structure of South America is still less known than that of the northern continent.

It is understood, however, that crystalline and granitoid rocks prevail throughout the entire range of the Andes from Panamá to Cape Horn, as also in Colombia, Guiana, and the whole of Central and Southern Brazil, from the river Paraguay to the Atlantic, and from the 10th degree of south latitude to the Rio de la Plata; that the Palæozoic and transition series occupy a large portion of the table-land of Peru and Bolivia, around Lake Titicaca, together with a long narrow belt along the eastern flank of the Andes, from the source of the Pilcomaya to the northern frontier of Patagonia, as also a broader tract in the upper basin of the San Francisco; that the Secondary formations are very moderately developed, being confined chiefly to small areas in the central basin of the Orinoco and along its affluent, the Apure, to similar patches on both sides of Lake Maracaybo, with a still smaller one in Peru, north of Lima; that Tertiary strata extend in a broad continuous belt lying between the eastern flank of the Andes and the western frontier of Brazil, and from the 5th parallel of north latitude to the 50th degree of south latitude; and that Alluvium and modern detritus cover the territory of Buenos Ayres, together with a large portion of the basin of the Amazon.

15. **Minerals.**—South America has, ever since its discovery, been celebrated for its mineral wealth, and more especially for the abundance of its precious metals.

It was this that excited the cupidity of the Spaniards, and that led to the conquest of Peru in the earlier part of the sixteenth century. "Why do you quarrel about such trifles?" said an Indian chief, addressing Balboa. "If you are so passionately fond of gold as to abandon your own country, and to disturb, for its sake, the tranquillity of distant nations, I will conduct you to a region where the metal which seems to be the chief object of your admiration and desire is so common that the meanest utensils are formed of it." Ever since that period till the recent discoveries of gold in California and Australia, a great part of the precious metals used in the world have been brought from America; and, with the exception of the Mexican mines, almost all from the southern continent. The chain of the Andes is richly metalliferous, more especially the countries of Peru, Bolivia, and Chilé; while Brazil, on the opposite side of the continent, yields to few countries on the globe in regard to the variety and riches of its metals and precious stones. Humboldt estimates the total amount of gold and silver extracted from the mines of Mexico, the Andes, and Brazil, from 1499 to 1803, at £1,248,000,000. During the present century the annual produce has vastly decreased, owing to political revolutions. In 1848, the produce of gold and silver from South America alone amounted to £3,500,000. In the following table are enumerated the principal localities in which the most important minerals occur *Gold* is found in New Granada, Peru, Bolivia, Ecuador, Chilé, La Plata. *Silver*, in Peru, Bolivia, New Granada, Chilé, and La Plata. *Tin*, in Peru, Chilé, and Brazil. *Lead*, in Ecuador and Brazil. *Copper*, in Chilé, Peru, and Brazil. *Mercury*, in Peru, Ecuador, and Brazil. *Iron*, in New Granada, Bolivia, Chilé, La Plata, and very abundantly in Brazil. *Antimony*, in Brazil. *Coal*, in Chilé, Brazil, and New Granada. *Sulphur*, in Brazil, Peru, and Ecuador. *Salt*, in La Plata, Brazil, Peru, and Bolivia. *Diamonds* are very abundant in Brazil, especially in the province Minas Geraes; and *other precious stones* in Brazil, Chilé, Peru, New Granada, and Guiana.

16. **Botany.**—South America embraces no fewer than six of the twenty-five phyto-geographic regions of modern botanists—viz., the 15th, 17th, 18th, 20th, 21st, and 22d (see p. 56).

The first of these is the "Mexican" or "Jacquin's Region," comprising Mexico, Central America, Columbia, Guiana, and Peru, and extending to the altitude of 5000 feet. The natural orders Cactaceæ and Piperaceæ are specially abundant, both in respect to species and individual plants; but other tropical orders, though numerous, are less frequent than in corresponding latitudes of the Old World. The ita palm, ivory palm, and *Victoria regia*, are peculiar to Guiana. Among the numerous cultivated plants may be mentioned maize, Guinea corn, cassava, yams, balatas, arrow-root, plantain, mango, custard apples, guava, papaw, pine apple, cashew, tamarind, vine, Indian fig, chocolate, vanilla, capsicum, sugar, coffee, cotton, and tobacco. The next region, called "Humboldt's Region," or the region of "Medicinal Herbs," embraces the loftier belt of the Andes, between the altitudes of 5000 and 9000 feet. Many important articles of Materia Medica are furnished by the plants in the sub-order *Cinchonæ*, which is peculiar to this region—forming, indeed, its principal feature. The medicinal barks of commerce, especially Peruvian bark, are very abundant in Upper Peru. The cultivated plants of the lower grounds almost entirely disappear, with the exception of maize and coffee; but potatoes, European fruits, and cereals supply their place. Above this is the region of *Escallonieæ* and *Calceolariæ*, embracing the highest elevations of the last-mentioned range, up to 18,000 feet, being the limit of perpetual snow. Here tropical forms almost wholly vanish, their place being supplied by the Alpine genera of saxifrages, gentians, mosses, lichens, &c.

Mean temperature, 59°—84° Fah. The next region, being that of "Palms and Melastomaceæ," or the "Brazilian Region," embraces all South America between the Andes and the Atlantic, extending southward to the Tropic of Capricorn. This is probably the portion of the globe in which the vegetable kingdom attains its greatest profusion and variety, whether regard be had to the abundance of genera and species, the magnitude of individual forms, the vast extent of the primeval forests, or the numerous climbing and parasitical plants. In place of the few mosses and lichens which cover the trunks and branches of forest trees in temperate climes, in Brazil they are bearded from the roots to the extremities of the smallest branches with ferns, cactuses, orchids, &c. The cultivated plants are the same as in the Mexican region, while the mean annual temperature varies from 59° to 84° Fah. The fifth region is that of "Arborescent Compositæ," or "St Hilaire's Region," embracing the portion of South America lying between the Tropic of Capricorn and the northern limit of Patagonia. Here the flora approaches in a remarkable manner to that of Europe, while it differs entirely, except in Chilé, from the floras of the corresponding latitudes of Africa and Australia. More than half the genera are the same as in Europe, the compositæ especially being very numerous. The *Pampas*, on the eastern side of the Andes, are covered with tall grasses and thistles, whilst cultivated plants comprise wheat, the vine, and the peach. The last botanical region is the "Patagonian," or "Antarctic," embracing Patagonia, the Fuegian Archipelago, and the Falkland Isles. The vegetation bears a great resemblance to that of Central Europe, or "Linnæus's Region," while there is a slight approximation to the floras of Southern Africa and Australia. Many of the common British weeds are found, according to Balfour, at the southern extremity of this continent. The mean temperature varies from 41° to 48° Fah.; but the soil is never cultivated. Tussac grass, which makes excellent fodder, covers a great part of the surface of the Falkland Isles.

17. **Zoology.**—This continent forms, with Mexico, Central America, and the West Indies, one of the six zoological kingdoms of modern naturalists. It embraces two provinces of very unequal dimensions, viz., Tropical America, embracing all the countries situated within the tropics, and Austral America, comprising the remainder of the continent, together with Tierra del Fuego and the Falkland Isles. The distribution of the animals in the latter province is but very imperfectly known, while that of Tropical America will be found in the table at pp. 59 and 582.

Of the 1967 existing Mammals (the number given by Wagner and Waterhouse), there are 518 found in this zoological kingdom, and of these no fewer than 419 species are peculiar to it. The QUADRUMANA, 74 in number, are all peculiar, and are distinguished from those of the Old World by having prehensile tails, which serve the purpose of a fifth hand. The CARNIVORA, of which there are about 188 species, are nearly all peculiar. and are mostly of small size and fearful of man; the largest of them are the puma and jaguar, the latter being a very formidable animal; but the whole list of savage quadrupeds, so common in Africa and India, are wholly unknown in this continent. Cats, dogs, otters, and skunks are numerous in species, though not in individuals; bears, racoons, coatis, and gluttons are the principal Plantigrada; while the bats are more numerous than in any other part of the world, amounting to 55 species, the most formidable of which is the large vampyre bat, which frequently sucks the blood of horses and mules during the night. The MARSUPIALIA are represented in S. America by the single family of Didelphidæ or opossums, which contains 21 species, all of which are found here. They are in general so small as to be easily mistaken for rats and mice, the Virginian opossum alone attaining the size of a cat. Of RODENTIA there are 95 species in Brazil alone, including squirrels, porcupines, and hares. The capybara, the largest of all the order, inhabits Brazil, Guiana, and Paraguay; the utia is found in Cuba; the coypu in Chilé; the lagotis, viscacha, dusky paca, agouti, acoucha, and cavy, in many places. The chinchilla, a small animal yielding a beautiful and delicate fur, has its habitat in the Southern Andes. The EDENTATA, or toothless animals, are represented by the sloth, ant-eater, armadillo, and by the extinct megatherium and mylodon. This order, indeed, is chiefly confined to S. America, which contains three times as many species as all the Old World.

The PACHYDERMATA, once so numerous in this continent, as is evidenced by their fossil remains, are now represented by only 4 species, viz., two tapirs and two peccaries. The only other tapir known is found in the Malay Archipelago. The tapir is allied to the rhinoceros and hippopotamus of the Old World, and is nearly as amphibious as the latter; while the peccary resembles the hog in appearance and habits—the same bristly hair and the same delight in wallowing in the mire. Of the 13 species of RUMINANTS found in this continent, no fewer than 12 are peculiar to it. The most interesting species belong to the genus Auchenia, and comprise the guanaco (which in its tame state is named the llama), the paco or alpaca, the taruga, and the vicuña. These belong to the same section of the Ruminantia as the camel, and all hold a conspicuous place among wool-bearing animals. When the Spaniards invaded Peru and Chili they found the llama domesticated and used as a beast of burden; its flesh was eaten, its skin prepared into leather, and its wool spun and woven into cloth. Along with the alpaca, and with the horse and mule introduced by Europeans, the llama is still kept in a state of domestication in Peru and Bolivia, by the Indian population.

The ORNITHOLOGY of Tropical America exceeds in splendour that of any other region of the globe, comprising no fewer than 624 species, or one-tenth of all known birds. It is the chosen metropolis of the humming-birds, parrots, toucans, and tanagers. Of rapacious birds the chief is the famous condor of the Andes, one of the most formidable existing birds. Huge serpents and other REPTILES abound in the moist and annually inundated plains, the total number in the Tropical Province being 62. The principal species are the alligator, boa-constrictor, and rattlesnake, all of which are peculiar to America. The seas, lakes, and rivers abound with FISH of various kinds, which in Brazil and some of the other countries form one of the most important sources of wealth. The varieties of the INSECT tribes are endless—immense centipedes, scorpions, spiders, ants, termites, locusts, mosquitoes, and chigoes, are the torment alike of man and beast.

18. **Ethnography.**—The population of the New World is presently estimated at 60,497,702, two-thirds of whom belong to the northern continent (including Mexico, Central America, and the West Indies), and one-third to the southern. It consists of three pure races—viz., the Indians or aborigines, the Negroes or Africans, the Caucasians or Whites (consisting of Europeans with their descendants), and a mixed race, springing from the union of those of pure blood. The European population amounts to about 33,000,000, or upwards of a half of the whole; while the other three divisions are nearly equally represented, each consisting of about 9,000,000. The Indian population, including the Esquimaux of the northern regions, who are few in number, and probably of a different origin from the other aborigines, is about equally divided between the two continents, there being 4,900,000 of them in N. America, and 4,100,000 in the southern continent. In Mexico alone they number 3⅓ millions, in Central America 1 million, and in the United States about one-third of a million. South America, unlike the northern continent, exhibits a preponderance of the aboriginal and mixed races. The Negroes number 3,600,000 in the United States; 2,000,000 in the West Indies; while in Brazil they constitute a full half of the population. Except in the United States and the Spanish possessions, the negroes are almost entirely in the enjoyment of liberty.

ANTIQUITIES.—How America was peopled, and what is the real affinity of its aboriginal tribes to the rest of mankind, are questions that are still involved in obscurity, notwithstanding the numerous and able investigations that, during the last half century, have been instituted in every department of the subject. After a careful examination of much that has been written on this very interesting theme, we incline to the opinion that by far the greater portion of the New World was peopled at different points, and from different parts of eastern Asia; that these migrations, though all very ancient, took place at distinct and widely separate periods; but that the ancestors of the present aborigines of the eastern part of North America entered that continent directly from northern Europe, and swept before them the comparatively advanced civilisation which had been developed there before their arrival. The memorials of a population differing in many important respects from the tribes which roamed in America at the time of its discovery by Columbus—yet in other points strongly resembling them—are found in great numbers throughout the whole length and breadth of the continent. These memorials have been discovered in the extreme north-west of the continent, where, however, they are comparatively few and uninteresting, though apparently of great antiquity; around the western and southern shores of the great lakes, where they have been more carefully examined; along the Gulf of California, where in some places they cover the ground for many leagues; and, especially, in the broad valley of the Mississippi, with its tributaries the Ohio and Missouri, where they occur in almost incredible numbers and magnitude. Indeed, so far as the northern continent is concerned, the valley of the Ohio would appear to have been at one time—probably about a thousand years ago—the grand centre of power and population of this now extinct or dispersed people. The works of various kinds which they erected, the remains of which still exist (the animal mounds, the conical mounds of sepulture, the sacrificial mounds, the temple mounds, the sacred enclosures, the beacon mounds, and the systems of fortification), are evidences of immense resources for so rude an age; far greater, indeed, than are to be found in any other portion of the continent, except in what would seem to be another, and much later, centralisation of the same people in Mexico and Yucatan, where they passed the golden age of their history. (See p. 622.) These and other monuments of hoary antiquity in the so-called New World, lead us irresistibly to the inference, that the true aborigines of the basin of the Mississippi had made great progress in the useful and ornamental arts: for not only do we find arrow-heads, beads, coarse vessels of pottery, stone axes, knives of flint; but the sculptured figures of various animals, executed with much skill; well-chiselled likenesses of the human head; copper bracelets; extensive remains of mining operations and of the manufacture of salt; and above all, tablets of curious hieroglyphics, apparently recording the great events in their history. Having entered America at its north-west angle, they resided for ages between the Rocky Mountains and the Alleghanies, in every part of which are still seen the memorials of their ancient greatness. At length, driven southward by fresh hordes of immigrants, they ultimately settled in Mexico, where they attained the climax of their civilisation, and erected great cities and other public works which excited the astonishment of Cortez and his companions. How many centuries must have elapsed ere this primeval race, that had made such astonishing progress in so many of the arts, but of whose existence both history and tradition are alike silent—whose colossal public works have been buried for ages under gigantic forests, or deserted by the rivers and lakes in whose vicinity many of them must have stood—could have degenerated into the savage tribes of hunters and warriors that now roam over the forests and prairies of the North American continent!

But the attempt to trace any immediate connection, by means of these ancient monuments, between the Mexicans and the aborigines of South America, appears to have entirely failed. The Peruvian civilisation, instead of being an offshoot from the Mexican, or an improvement upon it, seems rather to have been spontaneously developed, having its origin and growth within the limits of the southern continent, and attaining its climax under the Incas. Tschudi and others are of opinion that Manco Capac in Peru, and Quetzalcoatl in Mexico, were Buddhist missionaries who, about A.D. 1000, visited the American continent with the view of reforming and elevating the natives. If this supposition is well founded, it throws some light on the question, Whence came the earliest inhabitants of North and South America respectively? and corroborates the hypothesis, that the civilisation of the southern continent was not derived from that of the northern. On the whole, it would appear that while the aborigines of North America came originally from Mongolia, those of the southern continent came from China, Japan, the Malay Archipelago, and other countries of south-eastern Asia. The maritime habits of these nations render this supposition sufficiently probable, while their charts and maps give indications of voyages to the New World (which they designate by the name of Too-sang) as early as the seventh century of our era. With chains of islands, not far remote from each other, stretching across the Pacific Ocean from continent to continent—with winds and marine currents setting, often for weeks together, towards the American shores—with wars to make them flee, and curiosity or cupidity to make them rove—and with casualties to launch them on voyages the direction or length of which they knew not—we need not marvel that the first inhabitants of the New World should have come originally from Eastern Asia. Similar events, though on a smaller scale, have frequently taken place in more recent times. For example, Iceland was discovered in A.D. 862 by Danish mariners, bound for the Faröe Isles, but thrown out of their course by tempests; Greenland was discovered by a Norwegian in 981; Cabral, the commander of a Portuguese fleet, on his way to the East Indies in the year 1500, departed so far from the African coast as to touch the shores of South America, and thus the discovery of Brazil was purely accidental; while in 1833, a Japanese junk was cast ashore on the American coast, at Cape Flattery, opposite Vancouver Island, three men being still alive out of an original crew of seventeen.

LANGUAGES.—The languages spoken by the aborigines of the New World are distinguished from all Oriental tongues by three striking peculiarities. 1. Notwithstanding their great number, they all strikingly resemble each other in grammatical structure—a clear proof of the common origin of the inhabitants. 2. They differ very widely from each other in their roots or vocables, many of them having scarcely a word in common with any other tongue. 3. But their most remarkable feature is their *polysynthetic* or *holophrastic* character—that is, they are all characterised by peculiarly complex forms, somewhat resembling our compound words, each term expressing a number of distinct ideas. For example, the word *amatlacuilolitquicatlaxtlahuitli* signifies "the reward given to a messenger who bears a hieroglyphical map conveying intelligence." In these linguistic features, which so widely distinguish these tongues from all others, we have the best species of evidence that the American continent was peopled at a very remote period of antiquity. In the "Bible of Every Land" upwards of two hundred languages belonging to this family are enumerated, and these are divided into ten groups (exclusive of the dialects spoken in Mexico and Central America), seven of which belong to the northern continent, and three to the southern. These are: 1, the Esquimaux, spoken along the entire northern coast by a people who, in physical conformation, appear to be intermediate between the natives of northern Asia and the aboriginal Indians; 2, the Athapascan or Chipewyan, occupying a broad belt south of the Esquimaux, and mainly between the Hudson Sea and the Pacific; 3, the Algonquin, found now chiefly in Canada and the Hudson Bay Territories. but formerly covering also a large portion of the United States; 4, the Iroquois, occupying a large tract of country in the United States, and in the centre of the Algonquin area; 5, the Sioux or Dacota, comprising the tribes inhabiting the prairie country of the interior, from the Mississippi to the Rocky Mountains; 6, the Floridian or Appalachian, embracing the languages originally spoken in the southern United States, but now in several instances extinct; 7, the unclassified tongues of the United States, between the Rocky Mountains and the Pacific, and sometimes known as the Panis-Arrapahoes. The numerous languages of Central America are little known and still unclassified: for the Aztec or Mexican, see at p. 622 . . . . Less is known regarding the ethnology of South America than perhaps of any other region in the world; but the languages have been provisionally arranged under three groups—viz., 1, the Ando-Peruvian, spoken by all the nations occupying the great mountain-chain of this continent; 2, the languages of Eastern South America, embracing the Guarani and Carib, in Brazil and Guiana; 3, the languages of Central South America, spoken by the tribes that inhabit the forests and llanos that extend from the Paraná to the Rocky Mountains.

COLOMBIA,

OR THE

GRANADIAN CONFEDERATION, ECUADOR, AND VENEZUELA.

Boundaries.—N., the Caribbean Sea; W., Costa Rica and the Pacific Ocean; S., Peru and Brazil; E., Guiana. Lat. 11° 20′ N. —5° 50′ S.; lon. 60°—81° 20′ W.

Colombia was the name formerly given to those countries in the north-west angle of South America which, under the dominion of Spain, formed the vice-royalty of New Granada, the captain-generalcy of the Caraccas, and the province of Quito. They continued in connection with Spain till 1821, when they achieved their independence, and formed themselves into the Republic of Colombia. After a brief history of eleven years this state was dismembered, and constituted into three distinct republics—New Granada, Ecuador, and Venezuela—which maintained their integrity till 1858, when New Granada was broken up into the eight independent republics which now constitute the Granadian Confederation. Bogotá, the capital of Cundinamarca, and formerly of New Granada, situated near the central parallel, has the same latitude as Cayenne in French Guiana, Capes Palmas and Formosa in the Gulf of Guinea, Magadoxo in Eastern Africa, and Penang in Further India. The extreme length, between Costa Rica and the mouth of the Orinoco, is about 1700 miles, and the greatest breadth, from N. to S., about 1300 miles.

Area and Population.— The combined area is estimated at 1,273,660 square miles, and the aggregate population at 3,973,462. With ten times the area of the British Isles, Colombia contains only one-seventh of their population. For the area and population of the different states, see the table at p. 635.

Political Divisions.—The Granadian Confederation, as already stated, consists of eight small states: Ecuador, of three departments, besides the Galapagos Isles (p. 636); and Venezuela, of thirteen provinces.

GRANADIAN CONFEDERATION.

Panama.—Panamá 10 (G. of Panamá), David 5 (David), Santiago de Veragua 5 n. (Montejo Bay), Chagres, Aspinwall (Caribbean Sea).

Magdalena.—Santa Marta 10 (Caribbean Sea), Mompox 10, Ocaña 5 n. (Magdalena).

Cundinamarca.—Bogota, or Santa Fé de Bogotá 40 (San Francisco, *affl.* Magdalena), Honda 6 (Magdalena).

Cauca.—Popayan 20, Cartago 3 (Cauca), Pasto 7 (Patia).

Boyaca.—Tunja 7 (Sogamozo, *affl.* Magdalena), Socorro 12 (Suares).

Antioquia.—Antioquia 5, Medellin 14 (Cauca).

Bolivar.—Cartagena 10 (Caribbean Sea).

Santander.—Pamplona 3 (Cucuta, *affl.* Zalia).

ECUADOR.

Quito or Ecuador.—Quito 70, Esmeraldas 4 (Esmeraldas), Ibarra 12, Otovalo 15 n. (Mira), Riobamba 20, Ambato 12 n., Tacunga 10 (Pastaza, *affl.* Amazon).

Guayaquil.—Guayaquil 18 n., Tumbez (G. of Guayaquil), Puerto Viejo 2 (Pacific Coast).

Assuay.—Cuença 20 (Pauté *affl.* Amazon), San Borja, Santiago (Amazon), Loxa 5 (Zamora).

VENEZUELA.

Maracaybo.—Maracaybo 14, Alta Gracia (Maracaybo Strait).

Coro.—Coro 4 (G. of Venezuela).

Carabobo.—Valencia 16 n., Puerto Cabello 8 (Coast), San Carlos 10 (Aguine, *affl.* Portuguesa).

Caraccas.—Caraccas 50 n., La Guayra 6 (Coast), Calabozo 5 (Guerica, *affl.* Orinoco).

Barcelona.—Barcelona 15 (Caribbean Sea).

CUMANA.—Cumaná 12, Cumanacoa 5 (Manzanáres), Maturin (G. of Paria).

GUIANA.—Angostura 6 (Orinoco).

APURE.—Achaguas 2 n., San Fernando de Apuré 6 (Apuré, *affl.* Orinoco).

VARINAS.—Varinas 4 n. (Apuré).

MERIDA.—Merida 6 (Chama, *affl.* L. Maracaybo).

TRUXILLO.—Truxillo 4 n. (L. Maracaybo), Arauré 10 (Acarigua), Guanaré 12 (Guanaré).

BARQUESIMETO.—Barquesimeto 12 n. (Portuguesa), Carora 6, Tucuyo (Tocuyo).

MARGARITA.—Assuncion (Island Margarita).

Descriptive Notes.—*Panama*, capital of the new republic of same name, on the Pacific coast of the isthmus, and at the southern terminus of the railway to Aspinwall, has an excellent harbour and a rapidly increasing trade. *Aspinwall*, at the northern terminus of the railway which spans the isthmus, has within a few years risen to be a place of considerable importance. *Santa Marta*, capital of Magdalena, has a fine cathedral, and a harbour defended by batteries. BOGOTA, formerly Santa Fé de Bogotá, capital of the republic of Cundinamarca and of the Granadian Confederation, stands on a lofty plateau of the Andes, at an elevation of 8958 feet above the sea. It is a large and handsome city, with a university and a fine cathedral, and is surrounded by magnificent scenery. Near it is the celebrated cataract of Tequendama, formed by the Bogotá, which suddenly precipitates itself to a depth of 900 feet. Bogotá was the capital of the Spanish viceroyalty of New Granada, then of the republic of Colombia, and afterwards of the state of New Granada. *Popayan*, capital of republic of Cauca, and the first city built by Europeans in this region of America, is delightfully situated between two ridges of the Andes, and is a large, handsome city. *Tunja*, capital of republic of Boyaca, and at one time of the Indian kingdom of Cundinamarca, situated on the eastern slope of the Andes, is a flourishing place. Near it was fought, in 1819, the battle of Boyaca, in which the Spaniards were routed by Bolivar. *Antioquia*, situated on the eastern side of the western chain of the Andes, in a district noted for its gold and silver mines *Cartagena*, capital of Bolivar, a strongly fortified city and seaport, and the chief naval arsenal in the confederation, contains a magnificent cathedral and several other fine public buildings. *Pamplona*, capital of Santander; near it are mines of gold and silver.

ECUADOR.—QUITO, capital of the republic of Ecuador, is a large city situated near the equator, in a ravine on the east side of the volcano of Pichincha, 9543 feet above the sea. It was nearly destroyed by an earthquake on March 22, 1859, when 5000 of the inhabitants lost their lives. Though situated almost under the equator, it enjoys a continual spring, owing to its great elevation and its proximity to lofty mountains crowned with perpetual snow. It is a curious fact that Quito, though only 90 miles from the Pacific, is greatly more accessible from the Atlantic, which is 3000 miles distant—the Pastaza, a tributary of the Amazon, being navigable to within 150 miles of it, whilst the shorter route to the west coast runs across the stupendous mountain-ridges of the Andes. *Riobamba*, near the ruins of old Riobamba, which was destroyed by a fearful earthquake in 1797, when nearly all the inhabitants perished. *Guayaquil*, the principal commercial and seaport town of Ecuador, possesses one of the finest harbours on the Pacific. It is noted for its shipbuilding and refined society. *Tumbez*: here the Spaniards, under Pizarro, first landed on the South American coast, in 1526. *Cuença* is chiefly noted for its university.

VENEZUELA.—*Maracaybo*, a fortified seaport, with a college, and an active trade with the interior. *Coro*, once the capital of Venezuela, is situated near the Gulf of Maracaybo. *Valencia* is finely situated, covers a large surface, and has an active commerce with Caraccas and Puerto Cabello. *Caraccas*, or *Caracas*, capital of the republic of Venezuela, is noted as the birthplace, in 1780, of General Bolivar, the liberator of Spanish America. It is a large, meanly built city, and has frequently suffered from earthquakes—that of 1812 swallowed up 12,000 of the inhabitants. *La Guayra*, the seaport of Caraccas. *Barcelona*, founded in 1634, and built of mud, stands in an unhealthy situation, and exports horses and cattle. *Cumaná*, with a magnificent harbour, is the principal seaport of the republic. In July 1853 it was nearly destroyed by an earthquake. *Angostura*, the chief place of trade in the valley of the Orinoco. *Achaguas*, capital of the province Apuré, near one of the principal affluents of the Orinoco. *Varinas*, a small town on the Apuré, with an active trade in rural produce. *Merida*, with a richly adorned cathedral, was, before its destruction by an earthquake in 1812, the largest city in Venezuela, and is again flourishing. *Truxillo*, the capital of a province, named after the birthplace of Pizarro in Spain. *Barquesimeto* is now but a wreck of what it was previous to the great earthquake of 1812. *Assuncion*, capital of the island Margarita, is a small town, actively engaged in fishing.

Surface and Climate.—The surface of Colombia is highly diversified, having, in the west, the three nearly parallel ranges of the Andes, embracing Cotopaxi, Antisana, Pichincha, and Tolima, the most tremendous volcanoes on the earth's surface, with elevations varying from 19,000 to 16,000 feet, and the huge dome-shaped Chimborazo 21,424 feet; in the east, the greatly lower mountains of Parimé, the highest summit of which, Maravaca, attains an elevation of 10,500 feet; and in the centre, the magnificent *llanos* of the Orinoco, consisting of immense flats, covered with vast forests and savannahs.

The principal left-hand affluents of the Orinoco—the Apuré, Meta, and Guaviaré—have their sources in the eastern chain of the Andes; while the Paragua is the only important tributary on the right. About 130 miles below its source, the Orinoco sends off to the south a branch called the Cassiquiaré, 200 miles in length, which joins the Rio Negro, a tributary of the Amazon—thus effecting a navigable communication between the basins of these two great rivers. Between the eastern and central ridges of the Andes, the Magdalena pursues its course northward for 800 miles, and discharges its waters into the Caribbean Sea; while its principal affluent, the Cauca, flows between the central and western ranges.

grounds.

Natural Products.—These countries, especially Ecuador and the Granadian Confederation, are highly distinguished for their mineral wealth.

Ecuador has been very imperfectly explored; but from recent researches it appears that valuable gold-fields, and fine specimens of ruby-silver, line the eastern slopes of the Andes; that lead and quicksilver abound in many places, and sulphur near Chimborazo. The Granadian Confederation contains all the important metals, including gold, silver, copper, iron, tin, lead, and platinum. Coal is found near Bogotá; diamonds, sapphires, and emeralds, together with amber, turquoises, and rock-salt, in several places. The gold mines of Venezuela, which attracted the cupidity of the Spaniards in the seventeenth century, have long ago been abandoned; but copper, tin, and silver are found in several places; asphalt and petroleum are abundant round Lake Maracaybo; coal of an excellent quality abounds on the coast and at Coro; and inexhaustible supplies of fine rock-salt occur at Araya. Few mines, however, are wrought in any part of Colombia, as the resources of the country have been exhausted by the recent civil wars.

The vegetable products are highly diversified and valuable. The forests—especially those of Ecuador and New Granada—afford inexhaustible supplies of timber, dye-woods, cedar, mahogany, ebony, and other ornamental woods; Peruvian bark, caoutchouc, resins, and other gums; ginger, honey, wax, sarsaparilla, and other drugs. The principal cultivated plants are cacao, cinnamon, coffee, cotton, indigo, sugar-cane, maize, and other grains. The plantain supplies the staple food of the great majority of the people. Numerous herds of cattle are reared in the *llanos*, and their hides form a valuable article of export. Agriculture is conducted in the most indolent and slovenly manner, as is usual where the climate is tropical, the soil highly fertile, the land cheap, the roads bad, the seaports few, and the markets distant. For want of communication with the seaboard, the vast natural resources of Ecuador are at present lying waste—the Brazilian and Peruvian governments preventing free access to the Amazon; while the vastly shorter distance to the Pacific is, in most places, all but impracticable. For the fauna of Colombia, see under "South America."

Ethnography.—The whole of Colombia formerly belonged to Spain; and the population, as in the other Spanish American states, is composed of different races—Spaniards, Indians, and Negroes, with their mixed progeny, distinguished into five or six different classes, which, collectively, greatly outnumber the pure races.

The Whites or Creoles, though numerically weak, still maintain a leading position, owing to their superior education and intellectual endowments. The Indians, who belong for the most part to the Quichua and Guarani nations, are described as industrious and docile; they are usually the miners, agriculturists, herdsmen, and manufacturers of the different states. The Quichua or Peruvian, once the predominant language of Peru, still prevails in the plateau of the Andes, from Quito to Santiago del Estero, in La Plata; while the Guarani occupies the eastern half of Venezuela, together with the whole of Brazil. The Negroes are comparatively few in number, and all free—the different governments having abolished slavery in their respective dominions. In religion and education the inhabitants resemble those of the mother country. Manufactures are limited to coarse woollen and cotton stuffs, for home consumption; but in no case does the native industry satisfy the demand of the country. The great staples of the country are cacao, cotton, tobacco, sugar, coffee, indigo; and these articles, with hides, Brazil-wood, Peruvian bark, gums, and the precious metals, constitute the chief exports. The larger portion of the foreign trade is carried on with Great Britain. Internal commerce is greatly impeded for want of roads, canals, and railways.

GUIANA.

Boundaries.—N. and E., the Atlantic; W., Venezuela and Brazil; S., Brazil. Lat. 1°—9° 20′ N.; lon. 50° 40′—61° W.

The name Guiana was formerly applied to the vast tract bounded in the interior by the Amazon, the Rio Negro, the natural canal of the Cassiquiaré, and the Orinoco; but by far the greater part of this area is now included within the territories of Brazil and Venezuela—the Sierra Acarai now forming the southern frontier of Guiana. Paramaribo, capital of Dutch Guiana (lat. 5° 49′ N.), is nearly on the same parallel of latitude as Bogotá, Pulo Penang, and Munrovia, capital of Liberia; and on the same meridian as Newfoundland, Santarem, and Monte Video.

Area, Population, and Political Divisions.—The area is estimated at 142,060 square miles, being considerably more than that of the British Isles; while the population (245,000) is less than that of Mid-Lothian. It is divided into British Guiana, in the west, consisting of the three settlements, Berbice, Demerara, and Essequibo; Dutch Guiana, in the centre; and French Guiana, in the east, whose respective areas and population are as follows:—

COLONIES.	Area in Square Miles.	Population.	Date of Census.
British Guiana.................	76,000	255,008	1857
Dutch Guiana.................	38,500	53,709	1858
French Guiana................	27,560	21,440	1858
Total, ...	142,060	330,157	

British Guiana is nearly as large as Great Britain; Dutch Guiana, considerably larger than Ireland; while French Guiana, now constituted into a penal settlement for political offenders, is less than Scotland.

BRITISH GUIANA.—George Town 25 (Demerara), New Amsterdam 3 (Berbice).

DUTCH GUIANA OR SURINAM.—Paramaribo 20 (Surinam), Amsterdam (coast).

FRENCH GUIANA OR CAYENNE.—Cayenne 4 (Island Cayenne).

Descriptive Notes.—*George Town*, the capital of the British colony, situated near the mouth of the Demerara, is built of wood, with broad streets intersecting at right angles, and traversed by canals which are crossed by a multitude of bridges. It exports rum, sugar, and coffee. Four-fifths of the population are people of colour. *Paramaribo*, capital of Surinam, considerably resembles George Town in its wide streets, canals, bridges, &c. The streets are lined with orange, lemon, and tamarind trees. It is a place of extensive trade, exporting sugar, coffee, cacao, cotton, and indigo. Most of the inhabitants are blacks. *Cayenne*, capital of the French colony, situated on a small island in the mouth of the river Cayenne, is a mean-looking, wretched place, and extremely unhealthy. Nearly all the trade of the colony, which consists chiefly of the exportation of sugar, cotton, cloves, coffee, cacao, maize, and a species of capsicum known as Cayenne pepper, is transacted here. Half of the population are liberated slaves.

Surface and Climate.—The maritime region is low and level, but exceedingly fertile, consisting of a rich alluvial soil which extends into the interior for about fifty miles. The country then rises in successive terraces to the Sierras of Pacaraima and Acarai, the latter of which separates it from Brazilian Guiana.

Near the western boundary, Mount Roraima rises to an elevation of 7500 feet. These terraces traverse the country from east to west, and have wide valleys between them, covered with dense forests. The climate is tropical, but more genial than that of most places in the torrid zone, owing to the trade-winds from the Atlantic, the sea and land breezes, and the frequent rains. It has two dry and two wet seasons on the coasts, each continuing for three months; but, in the interior, there is only one rainy season, from April to the middle of August. The mean temperature of the year is 81°. Violent thunder-storms occur at the change of the seasons; but hurricanes, so destructive in the West Indies, are unknown.

Natural Products.—Guiana is not remarkable for its minerals; but rock-crystals and red agates are found in the mountains, and a very fine variety of white clay near Essequibo.

The vegetation is extremely luxuriant, especially in the lower grounds, extensive districts of which are under water during the principal rainy season. Here the soil is so fertile that thirty crops of rice have been obtained in succession without manure. The forest-trees are of the most magnificent description, especially the mira-tree, which sometimes attains the height of 150 feet. Fruit-trees embrace the pine-apple, guava, cabbage-tree, marmalade-tree, and several varieties of palm. Medicinal plants, including quassia, gentian, &c., abound; while in the Berbice river was found, in 1837, the famous Victoria regia, one of the largest of aquatic plants, containing flowers a foot in diameter, and leaves from four to six feet across. Among cultivated plants the sugar-cane holds the highest rank, its cultivation having largely superseded the cotton and coffee formerly grown, but the latter is still extensively raised in the uplands; while rice, maize, wheat, yams, cassava, plantains, bananas, sweet potatoes, cacao, vanilla, tobacco, pepper, and cinnamon, are also raised. The fauna resembles that of other parts of tropical America, and is described under "South America," article "Zoology."

Ethnography.—The interior is chiefly inhabited by various tribes of Indians named Caribs, Arawacks, &c., who are allied to the now almost extinct aborigines of the West Indies. The coasts and settled districts are occupied by European settlers, by emancipated Negroes who are very numerous, and by mixed races.

Many labourers have of late years been brought to British Guiana from the East Indies, Madeira, and other hot countries, for the purpose of assisting in the culture of the plantations. The great staple of the various colonies of Guiana are sugar, rum, molasses, coffee, Cayenne pepper and other spices, cotton, and medicinal plants, which are exported in considerable quantities. In 1855, the value of the exports from British Guiana, which consisted chiefly of sugar and rum, was £1,331,371; the imports, being articles of British manufacture, to £886,016; revenue, £255,018; expenditure, £239,511. Internal communication is very defective, the usual mode of travelling being by boats on the various rivers; but canals are in course of construction in some places.

BRAZIL.

Boundaries.—E. and N.E., the Atlantic Ocean; N., Guiana, Venezuela, and the Granadian Confederation; W., Ecuador, Peru, Bolivia, Paraguay, and La Plata; S., Uruguay. Lat. 4° 30′ N.—33° 45′ S.; lon. 34° 47′—72° W.

It thus embraces about 38 degrees both of latitude and longitude; the greatest length from E. to W., along the 8th parallel of S. latitude, is 2600 miles; and the greatest breadth, along the 51st meridian, 2440 miles. The city Bahia or San Salvador, near the central parallel, is in the same latitude as San Felipe de Benguela, Mozambique, Capes Londonderry and Melville in Northern Australia, and Lima, the capital of Peru.

Area and Population.—The probable area of this gigantic empire is estimated at 3,956,000 square miles, being thirty-two times the size of the British Isles, and considerably exceeding the area of Europe.

According to the census of 1856, the population amounted to 7,677,800, or about a million more than the population of Ireland. This gives scarcely two persons to each square mile.

Political Divisions.—The empire is divided into twenty provinces, which have an average area of nearly one-and-a-half times that of the British Isles. They may be conveniently arranged into seven northern, ten eastern, and three inland provinces. The last-mentioned are very thinly inhabited, and are little known to Europeans.*

SEVEN NORTHERN PROVINCES.

AMAZONAS.†—Barra 4, Barcellos, Moreria (Rio Negro), Olivença (Amazon).

PARA.—Parà or Belem 14, Cameta 20 (Rio Parà), Macapá 6, Santarem 2 (Amazon), Bragança 2 (Atlantic).

MARANHAO.—Maranhao 30, Alcantara, Caxias 10 (Maranhao).

PIAUHI.—Oeiras 5, n., Paranahyba (Paranahyba).

CEARA.—Aracati 2, San Bernardo 6, Lavras 5, Ico 7, n., San Joao do Principe 10 (Jaguaribe), Villa Vicosa 5 (Croayhu), Fortaleza 3 (Ceara), Campo Mayor 8 (Quixeramobim), Bom Jardim 6 (Sao Gado).

RIO GRANDE DO NORTE.—Natal 10 (E. coast), Porto Alegre 4 (Appody).

PARAHYBA.—Parahyba 15 (E. coast).

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* The island Fernando de Noronha, 125 E. Cape St Roque, and Martin Vaz, 12° N.E. Cape Frio, also belong to Brazil.

† Amazonas, also called Rio Negro and Brazilian Guiana, comprehends the immense territory lying north of the river Amazon.

TEN EASTERN PROVINCES.

Pernambuco.—Pernambuco (comprehending Recife and Olinda) 26, Goyana 13, n. (coast).

Alagoas.—Porto Calvo 5, n., Macayo 5, Alagoas, n. (coast), Penedo 14 (San Francisco).

Sergipe del Rey.—Sergipe or San Christovao 2, n. (Vazabarris).

Bahia.—San Salvador or Bahia 125 (All Saints' Bay), Jacobina 10 (Itapicuri), Caxoeira 15 (Paraguacu).

Porto Seguro.—Porto Seguro 3, Caravellas 5 (coast).

Espiritu Santo.—Vittoria 5, Benevente 3 (coast).

Rio de Janeiro.—Rio de Janeiro 296, Sequarema 7, Marica 6, Parati 10 (coast).

Sao Paulo and Parana.—Sao Paulo 22, Porto Feliz 10 (Anhernby), San Sebastiao 6, Santos 8, Iguape 8, Antonina 6 (coast), Curitiba 12 (Curitiba).

Santa Catharina.—Desterro or Santa Catharina 6 (I. Sta. Catharina).

Rio Grande do Sul.—Porto Alegre 12, San Pedro 4 (L. Patos), Rio Pardo (Jacuy).

THREE INLAND PROVINCES.

Minas Geraes.—Ouro Preto or Villa Rica 9, Mariana 5, Piranga 15 (Piranga, *affl.* Rio Doce), Joao del Rey 5, Barbacena 12 (Rio Grande), Diamantina 6 (Diamond), Salgado 5 (San Francisco), Sabara 8, Caheté 6 (Velhas), Campanha 6, n , Baependi 9 (Verde).

Goyaz.—Goyaz or Villa Boa 8 (Vermelho, *affl.* Araguay).

Matto Grosso.—Cuyaba 10 (Cuyaba, *sub.-affl.* Paraguay), Matto Grosso or Villa Bella 15 (Guaporé), Diamantina 5 (Oru).

Descriptive Notes.—*Barra* or *Barra do Rio Negro*, capital of province Amazonas, is a small but ancient town on the Rio Negro, near its confluence with the Amazon, possessing some manufactures of cordage, cotton cloth, and tiles. Its exports in 1850 amounted in value to 22,000 dollars. *Pará*, a well-built, handsome town, defended by forts, and exporting india-rubber, isinglass, rice, drugs, cotton, vanilla, and a great variety of other products. *Cameta*, a populous place on the Tocantins, about 40 miles from its mouth, engaged in cultivating cotton, rice, tobacco, sugar, &c., and in the manufacture of lime from fossil shells. *Santarem*, near the mouth of the Tapajos, is the depot of the numerous articles of commerce collected in the forests around it and farther up the Amazon. *Maranhao* or *San Luiz de Maranhao*, an island in the mouth of the river of same name, is an important seaport and commercial town, and the entrepôt for the produce of the contiguous provinces. It exports cotton, rice, and rum, and imports slaves in great numbers. *Alcantara*, a large seaport and commercial town, with a fine harbour. *Natal*, near the mouth of the Rio Grande, was formerly an important military post, but is now principally noted for its exportation of Brazil-wood. *Parahyba* has considerable commerce, and contains a military arsenal. *Pernambuco*, embracing the contiguous towns of Recife and Olinda, is one of the most important seaports in Brazil, and the most eastern town in the empire. It has a fine harbour defended by a coral-reef, called a *recife*, which serves as a breakwater. *Bahia* or *San Salvador*, a large commercial city and seaport town, and, next to Rio de Janeiro, the largest in South America, is finely situated on a high rock which projects into All Saints' Bay. It was founded in 1549 by Thomé de Souza; has often suffered by war and insurrection; was for a time the capital of the empire; and has a most imposing appearance, especially as seen from the sea. *Rio de Janeiro*, capital of Brazil, and the largest and most commercial city in South America, lies on the western side of a noble bay, deep enough for vessels of the largest size, and so capacious that all the navies in the world might ride in it without jostling one another. The town is well built, much in the European style, with houses of granite four or five stories high, the streets narrow and intersecting at right angles. It is supplied with water by means of an immense aqueduct 7 miles in length, and is surrounded with the most enchanting scenery. *Porto Alegre*, capital of a province, on L. Patos, was founded in 1743 by a colony from the Azores. *Ouro Preto* or *Villa Rica*, so named from the rich gold mines found in its vicinity, is the capital of Minas Geraes, the richest mining province in the empire, and carries on an active commerce with Rio Janeiro. *Goyaz* or *Villa Boa*, capital of province of same name, is situated near the centre of the empire, and is a bishop's see. *Cuyaba*, capital of *Matto Grosso* since the year 1820, carries on an active commerce with the metropolis in diamonds, gold dust, hides, and ipecacuanha. The diamond mines have been worked since 1719, and their total produce from 1817 to 1849 was 10,000,000 dollars.

Surface and Climate.—The surface is about equally divided between lowlands and uplands, the former consisting of the immense level plains in the basins of the Amazon and Paraná, which occupy the entire north and west of the empire (p. 18); and the latter nearly all the eastern half.

Several parallel mountain ranges traverse this portion of the empire from north to south, forming elevated ridges of table-land, separated from each other by affluents of the Amazon, and by the San Francisco. The principal ranges, commencing at the east side, are Sierra do Espinhaço (the highest summits of which are Itambe, 5960 feet; Piedade, 5830 feet; Itacolumi, 5750 feet), Sierra da Tabatinga, and Cordillera Grande or Central range, the greatest height of which is from 6000 to 7000 feet. Immediately behind Rio Janeiro, a ridge extends along the coast, known as the Sierra do Mar or Sea Range, the highest summit of which, Morro dos Candos, attains an elevation of 4476 feet. The climate for the most part is that of perpetual summer. On the north-east coast and in the entire valley of the Amazon, it is characterised by great heat and moisture, though it is nowhere so oppressive as in corresponding latitudes of the African continent. In this portion of the empire the dry and rainy seasons seem to be commingled—the nights being fair and cloudless, the forenoons dark with lowering clouds, while during two hours in the afternoon thunder and lightning prevail, with torrents of rain. At San Luiz de Maranhao no less than 280 inches of rain fall annually. On the higher grounds of the centre and east, the temperature is considerably lower, and the fall of rain greatly less. Here, indeed, extensive tracts occur where scarcely any rain falls, while frosty nights are not uncommon. The mean temperature of the year at Rio de Janeiro is 74°; the mean winter, 68° 6′; and the mean summer, 79° 15′ Fah. In Brazil, as in all other regions south of the equator, the order of the seasons is the reverse of ours—December, January, and February being the hottest months of the year.

Natural Productions. – Brazil is celebrated for its valuable minerals. Next to Peru and Mexico it has, until recently, furnished more gold than any other country.

The gold is obtained from the sands of the rivers, and is specially abundant in the bed of the San Francisco. Silver, copper, iron, salt, splendid rock-crystals, and beautiful amethysts, are also abundant; while the diamond mines of the three inland provinces surpass all others in the world. Those of Minas Geraes are especially productive, having yielded in the 82 years subsequent to 1740, diamonds to the value of three and a half millions sterling. These are now worked by the Anglo-Brazilian Mining Company, organised in 1825. The principal mining district occupies a portion of both slopes of the Sierra do Espinhaço, almost due north of the capital.

The vegetable products are still more abundant and valuable, all the tropical plants of the New World being found here in the greatest luxuriance. The forests are the most magnificent on the earth's surface—the *selvas* of the Amazon alone covering an area ten times larger than that of the British Isles—and furnish every variety of useful and ornamental timber, gums, medicinal plants, and dyewoods. The country itself received its present name from the valuable wood called *Braza*, which the Portuguese found on its shores. It is of a red colour, very hard, susceptible of a high polish, and so heavy that it sinks in water. Rosewood, mahogany, fustic, logwood, are particularly abundant, while upwards of 100 species of palm give variety and grace to the landscape. Cacao, manioc, and caoutchouc are indigenous; while maize, wheat, rice, beans, sugar, coffee, cotton, and tobacco, have been introduced by Europeans. The flour of the cassava plant, which is extensively cultivated, forms the chief food of the humbler classes; while *maté* or Paraguay tea, prepared from the dried leaves of the Brazilian holly, grows spontaneously in extensive natural plantations. Before every meal, and at every hour of the day, it is drunk; being as much the passion of the Brazilians and their neighbours, as the Chinese tea is of the natives of north-eastern Asia. Agriculture is still in its infancy; there is not more than one 150th part of the surface under cultivation, and this portion is entirely limited to the coasts, the banks of some of the rivers, and the mining regions of Minas Geraes and Matto Grosso. The pastures are of vast extent, and prodigious herds of wild cattle roam over the *llanos* or treeless plains, valuable merely for their hides and horns, which are exported in great numbers, their flesh being left to the jaguar, puma, and other beasts of prey. The country also sustains an immense number of domestic animals, principally horned cattle and horses. Sheep are in little repute—the meat being ill-favoured and the wool of indifferent quality—but goats and hogs are abundant. The natural fauna is mainly characterised by its gigantic reptiles, its edentata, its tapirs, its humming-birds, and its astonishing variety of insects. Though one-fifth of the country has not been explored, upwards of 500 species of birds have been described, many of which are peculiar to tropical America. (See under "South America," article "Zoology.")

Ethnography.—The population is divided into numerous classes—viz., Brazilians or whites, who chiefly consist of Portuguese and their descendants, and number about a million; Indianos or aborigines, some of whom are domesticated, while others maintain their savage independence; Africans or negroes, who constitute a full half of the entire population, and the great majority of whom were till very recently in a state of slavery; Mulattoes, or mixed whites and aborigines; and Mestizoes, or mixed aborigines and negroes.

Aboriginal slavery was abolished some time ago. The importation of slaves from Africa was formerly carried on very extensively, but, in 1854, the emperor sanctioned the law for the suppression of the slave-trade; while, still more recently, he has issued an edict completely abolishing slavery within his dominions. This noble example will doubtless, ere long, manifest the most salutary effects in all parts of the empire. Slavery, however, as practised in Brazil, was of a far milder type than in the United States: many civil rights were accorded to the slave, and by paying his master a sum of money equal to his market value, he was entitled to demand his freedom; while, after his liberation was effected, he was admissible to all offices of the state, and, in the eyes of the law, was in all respects equal to the white man. The Brazilians being almost exclusively of Portuguese origin, the Portuguese language is everywhere prevalent; but the independent tribes of Indians continue to employ the dialects of their ancestors. These belong for the most part to the great Guarani branch of the American family of tongues (p. 645). The Roman Catholic religion, which is professed by the great bulk of the population, is the only one recognised by the state; but Protestantism enjoys a very limited amount of toleration. Science, literature, and art have scarcely any existence in Brazil, and popular education is at a very low ebb. Some of the higher classes, and of the government officers, are well informed, and the seaport towns are beginning to imbibe the spirit and knowledge of Europe; but these improvements have made little way into the interior. The morals of the people exhibit a very dark picture, while the elements required to effect a regeneration seem to be entirely wanting.

Manufactures and Commerce.—Manufactures are in their infancy, being confined chiefly to articles of primary necessity; and almost every branch of industry, not excepting agriculture, is performed by negroes.

The great wealth of the country arises from its raw produce and extensive trade, for which its long line of coast, spacious harbours, and ample means of water communication, afford singular facilities. Railway communication, also, has recently made some progress—a line connecting Bahia with the navigable river, San Francisco, being in course of construction. The total value of the imports, in 1856, amounted to upwards of £15,000,000 sterling; and of the exports, to about £16,000,000. Upwards of 62 per cent of the imports are derived from Great

Britain, and consist chiefly of manufactured cotton, silk, trinkets, furniture, wax, candles, hats, &c. The exports, which consist chiefly of coffee, sugar, cotton, hides, cabinet and dye-woods, drugs, gums, and diamonds, are forwarded to this country to the extent of 43 per cent of their whole value.

Government, &c.—Brazil was accidentally discovered by Alvarez de Cabral in A.D. 1500, and was first colonised by the Portuguese in 1531. In 1808 King John VI. of Portugal took up his residence in Brazil, and in 1815 constituted it a kingdom. In 1822 it declared itself an independent empire, under Don Pedro, who framed a constitution, vesting the government in a senate and chamber of deputies.

The government is a limited hereditary monarchy. The senate consists of 58 members elected for life by the emperor; and the chamber of deputies, of 118 members, elected by free citizens possessed of 200 *mil-reis* of annual property. In 1857-8 the regular army numbered 18,500 men, besides a national guard of 26,000. The navy in the same year consisted of 42 ships of war, including 15 steamers—carrying 305 guns. In 1853-4 the public debt amounted to £12,392,000; the revenue, to £3,825,000; and the expenditure, to £3,540,000.

PERU.

Boundaries.—N., Ecuador; W., the Pacific; S., the Pacific and Bolivia; E., Bolivia and Brazil. Lat. 3° 30′—22° S., lon. 69°—81° 20′ W.

The extreme length from N.W. to S.E. is 1500 miles, and the greatest breadth, along the tenth parallel, 580 miles. Lima, the capital, on the central parallel, is nearly in the same latitude as Bahia on the E. coast of Brazil, San Felipe de Benguela on the western coast of Africa, the northern extremity of Madagascar, and the coast of North Australia; and nearly in the same longitude as Kingston in Canada, Washington, Jamaica, and the Gulf of Darien.

Area and Population.—The area is very variously estimated by different geographers, but probably it does not exceed 523,500 square miles, or 4½ times the area of the British Isles; while the population, according to Bollaert, amounted, in 1860, to 2,200,000, of whom 1,600,000 were Indians, 40,000 negroes, 300,000 mestizoes, and 240,000 whites.

Political Divisions.—The republic was formerly divided into seven departments—viz., Truxillo or Libertad, Lima, Junin, Ayacucho, Cuzco, Arequipa, and Puno, the three first constituting Northern Peru, and the remainder Southern Peru. In 1845, Truxillo was subdivided into Libertad, Anchas, and Amazonas; Ayacucho, into Ayacucho and Huancavelica; and Arequipa, into Arequipa and Moquega. There are now, therefore, eleven departments (besides the two small provinces of Piura and Callao), which are subdivided into sixty-five provinces.

LIBERTAD.—Truxillo 6, Lambayeque 8, Payta 5 (N.W. coast).

AMAZONAS.—Caxamarca 7, Caxamarquilla 8, Guamachuco 8, n. (Marañon).

ANCHAS.—Tarapato 5 n. (Huallaga), Mayobamba 7 (Mayo, *affl.* Huallaga).

JUNIN.—Tarma 7 (Chancomacho, *sub-affl.* Ucayali), Huanuco 10, Pasco 16 (Huallaga), Huari 7 (Marañon), Junin (Jauja), Caxatambo 6 (Bar-

LIMA.—LIMA 70 n., Huaura, Pisco 3 (coast).

HUANCAVELICA.—Huancavelica 8, Jauja 4 (Jauja or Montaro).

AYACUCHO.—Huamanga or Ayacucho, 15 n. (Jauja).

CUZCO.—Cuzco 45 n., Abancay, 5 n. (Apurimac, *affl.* Ucayali), Urubamba 4 (Urubamba, *affl.* Apurimac).

AREQUIPA.—Arequipa 35 (Quilca), Islay 2, Arica 4, Iquique 1, Tarapaca n., Mamina n. (coast).

MOQUEGUA.—Tacna 10 (Tacna), Moquegua 10 (Ilo).

PUNO.—Puno 9, Chuquito 5 (Lake Titicaca).

PIURA.—Piura 10, Sechura (Piura).

CALLAO.—Callao 20 (coast).

Descriptive Notes.—*Truxillo*, a city and seaport on the N.W. coast, founded in 1535 by Pizarro, who gave it the name of his native town in Spain. *Payta*, a seaport town on the N.E. coast, celebrated in the narrative of Anson's voyages. *Caxamarca*, near the source of the Amazon, contains the ruins of the ancient palace of Atahualpa, the last emperor of Peru, who was assassinated here by the Spaniards. *Tarma*, in a valley of the Andes, 9000 feet above the sea, is resorted to by invalids from Lima for the sake of its bracing air. *Huanuco*, the most considerable town on the eastern slope of the Andes, and on the border of the immense forest which extends eastward for above 2000 miles, is one of the most ancient cities of Peru. *Pasco*, the highest city in the world, being 13,720 feet above the sea, is noted for its rich silver mines, which are more extensively worked than any other in Peru. Though coal exists in the neighbourhood, turf, timber, and even dung are employed in smelting the ore. The climate here is a perpetual winter. LIMA, capital of Peru, on the small river Rimac, six miles from its mouth, is a regular, well-built city about 10 miles in circumference. Owing to the frequency of earthquakes, the houses are rarely more than one story high, with flat roofs and unglazed windows. It was founded by Pizarro in 1534, and the cathedral, which is splendidly decorated, contains his remains. The university, the most ancient in the New World, contains a library of 20,000 volumes, and a museum of natural history and Peruvian antiquities. Lima was long the commercial entrepôt for all the west coast of South America, and it still carries on a large trade through its port, Callao, exporting silver and copper ore, Peruvian bark, vicuña wool, chinchilla skins, nitre, sugar, and soap. *Huancavelica*, at an elevation of 11,000 feet above the sea, is noted for its mines of gold, silver, and especially mercury, but the climate is extremely rigorous. *Huamanga*, now *Ayacucho*, on the route from Lima to Cuzco, was founded by Pizarro in 1539. Near it is the plain of Ayacucho, where, in 1824, the troops of Bolivar, under General Sucré, defeated the Spanish army, and thus terminated the dominion of Spain in South America. It contains a university and a splendid cathedral. *Cuzco*, the famous capital of the empire of the Incas, and the most ancient of their cities, was, according to tradition, founded A.D. 1043 by Manco Capac, the founder of the ancient Peruvian civilisation. In 1534 it was taken by Pizarro, who felt greatly surprised at its magnificence. The streets were wide and imposing, the palaces superb in the extreme, and the temples (especially the famous temple of the sun) richly adorned with ornaments of gold and silver. The gold to redeem Atahualpa was on its way from this place to Truxillo, borne by a herd of many thousand llamas, when the prince was murdered. It was then concealed by the natives, and never discovered. Owing to its great elevation (11,400 feet above the sea), the climate is cold during the prevalence of the rainy season, which continues from November to February. Manufactures of cotton and woollen stuffs, of leather and parchments, are still carried on here; and the inhabitants excel in various arts, as embroidery, painting, sculpture, &c. *Arequipa*, 7850 feet above the sea, and 80 miles distant from the Pacific, is situated at the base of a volcano 20,000 feet in elevation, and enjoys a delightful climate. It is a large well-built town, possessing a considerable trade and numerous manufactures of gold and silver stuffs, and of woollen and cotton fabrics; in its neighbourhood are gold and silver mines. *Islay*, the port of Arequipa, is a small town on the Pacific. *Arica* is the principal seaport of Southern Peru, and of Bolivia, which possesses no good seaport within its own limits. *Tacna*, N. of Arica, and farther inland, is the depôt of European merchandise for the greater part of Bolivia. *Puno*, on the N.W. shore of Lake Titicaca, at an elevation of 12,870 feet, is, next to Pasco and Potosi, the highest town in the world: the numerous mines in its vicinity are now mostly abandoned. *Chuquito* or *Chucuito*, with 5000 inhabitants, has greatly declined from its former importance, when it is said to have contained 300,000 people. *Piura*, formerly *St Michael*, founded by Pizarro, was the first Spanish colony established in Peru. *Callao*, at the mouth of the Rimac, and six miles from Lima, of which it is the port, is a mean-looking but strongly fortified town, possessing the best roadstead on the Peruvian coast, and has a railway connecting it with the capital. The old town was destroyed by an earthquake in 1746, when 3000 of the inhabitants perished.

Surface and Climate.—Peru is traversed, throughout its entire length, by the lofty chain of the Andes, running from N.W. to S.E., and forming two grand ridges, which divide the country into three widely different physical regions—viz. the Coast, the Central, and the Eastern Regions.

The Western or Coast Region, between the Andes and the ocean, is rarely more than 60 miles wide. It consists of an arid, rainless, and barren district, covered with sand, and intersected by chains of hillocks that cross it from E. to W. In some places of this district, no rain has fallen in the memory of man; but above the level of 400 feet, slight showers occasionally occur. The scanty vegetation is sustained by dews and dense fogs, or by artificial irrigation. The climate is sultry and unhealthy; there is no navigable stream except the Piura; and the few towns are generally situated close to the coast. The Central Region, or Montaña, consists of a lofty plateau, of about 12,000 feet of average elevation, which, though difficult of access from the coast, contains numerous cities, towns, and villages, owing to the coolness and humidity of the climate. It contains numerous morasses and lakes, which are frequently surrounded by bleak and cheerless wastes; but, at considerably lower levels, amongst the mountains are not a few favoured spots, enjoying a delightful climate, amid the most magnificent scenery on the earth's surface. The Eastern Region consists of immense plains, traversed by the head-waters of the Amazon, and covered with gigantic forests, which extend up the mountain sides to upwards of 5500 feet. The climate here is very humid, the crests of the Andes intercepting the equatorial winds, which come laden with moisture from the distant Atlantic. This region is very imperfectly known to Europeans, but it is said that in some localities the fall of rain is incessant. For the elevation of the Andes of Peru, see the general article, p. 638.

Natural Productions.—Peru was formerly more celebrated for its mineral wealth than any other country of South America. The silver mines of Cerro Pasco, and the quicksilver mines of Huancavelica, are amongst the richest in the world. Gold also occurs in limited quantities in Cuzco, and in the various silver mines.

Nearly all the mines of the precious metals are situated in the most elevated parts of the Andes, above the line to which cultivation extends—a circumstance which renders the working of them very difficult and expensive. The number of mines that have been worked is above a thousand, but most of them are now exhausted, or from other causes abandoned. The average annual produce of the Peruvian mines, from 1836 to 1846, was about half a million sterling, but formerly it amounted to greatly more (see p. 658). Besides the precious metals, the country yields iron, copper, tin, coal, sulphur, saltpetre, and rock-salt. The flora of Peru, including the 15th, 17th, and 18th phyto-geographic regions of Professor Schouw, is described in the general article on "South America;" while the cultivated plants are, in general, the same as those of Bolivia (which see). The best guano is obtained from the Chincha Islands, S. of Lima, and from the Lobos Islands, S. of Payta. Peruvian guano is now extensively exported to this country for manure, and is worth about £15 per ton. The guano was known to the aborigines of Peru, and used by them in manuring the land, before the arrival of the Spaniards in South America. The llama, alpaca, guanaco, and vicuña, are natives of the country. The llama has been used as a beast of burden from remote times, but mules are mostly employed for travelling. Sheep and cattle were introduced by the Spaniards; the former thrive best in the plateau region; but in Huamanga and Cuzco alone are to be found good herds of cattle. The wild animals of the country are noticed under "South America" and "Bolivia."

Ethnography.—Nearly three-fourths of the entire population of Peru consist of aboriginal Indians; about one-fourth are creoles and mestizos; and the remainder negroes, who number about 40,000.

The great bulk of the Indian population belong to the Quichua or Peruvian nation; but a kindred tribe, the Aymara, prevails in the region around Lake Titicaca (see under "Bolivia"). The Quichua Indians are for the most part confined to the great plateau, many of the smaller towns of which are exclusively inhabited by them. They seldom descend to the eastern plains, which are peopled by tribes greatly inferior to them in civilisation. Quichua was the predominant language of this country under the Incas, and is still spoken by nearly a million and a half of people, a third of whom are Choloes, or persons of mixed blood. It is said to have been as copious and artificial as the Greek, but as yet no portion of the Scriptures has been printed in it, owing mainly to the unsettled state of the country. The remains of palaces, temples, aqueducts, and other monuments of art, found in Peru, sufficiently attest, that when the country fell a prey to Pizarro and his sanguinary companions, the inhabitants had made considerable progress in civilisation (see under "South America"). Under the influence of the Spaniards, the character of the natives has greatly deteriorated. Agriculture and pastoral employments form now their favourite occupation; many of them are employed as porters, in carrying goods across the Andes; while not a few are engaged in mining and other mechanical operations. The creoles are tall, slender, and feeble, and are characterised by levity, fickleness, and incapacity of mental toil. Notwithstanding the equality professed by its democratic institutions, the stigma of slavery still attaches to Peru, some of the negroes being yet in a state of bondage. The Roman Catholic is the only form of religion recognised or tolerated by the State. Education is lamentably deficient, and that of the lower orders is wholly neglected. Lima contains a university and other educational institutions; and elementary schools, on the Lancasterian plan, exist in many of the other towns.

Peru, like Bolivia, formed part of the Spanish vice-royalty of Buenos Ayres, and finally achieved its independence by the decisive battle of Ayacucho, in 1824. In 1836, Peru, harassed by contending factions, solicited the aid of Santa Cruz, president of Bolivia, who came with an army and succeeded, after a series of sanguinary actions, in tranquillising the country; whereupon a confederation was formed, composed of North Peru, South Peru, and Bolivia—Santa Cruz being named supreme Protector. This state of matters continued till 1839, when, in consequence of the bloody battle of Yungay, Santa Cruz was driven out of the country, and the confederation brought to a close: and both countries, Peru and Bolivia, returned to their former political condition. The form of government is republican; the constitution, adopted in 1828, closely resembles that of the United States. The legislature consists of a Senate and a Chamber of Deputies, in the proportion of one deputy to 20,000 inhabitants, and two senators to each province. The executive power is vested in a president popularly chosen for a period of four years, who is assisted by a ministry chosen by himself, and by a council of state elected by the legislature. The standing army consists of 3000 men; and the navy, of 2 frigates, 2 war-steamers, and 11 smaller vessels, carrying 104 guns. In 1857, the revenue amounted to 18,656,256; the expenditure to 16,360,000; and the public debt to 46,451,000 piastres.

The internal trade is much impeded by want of good roads, but a considerable amount of trade is carried on with Brazil by way of the Huallaga, down which cottons, gums, resins, sarsaparilla, and wax, are exported. The maritime trade is chiefly with the ports on the Pacific coast, but that with Europe is considerable—the exports thither consisting of bullion, Peruvian bark, chinchilla skins, cochineal, cotton, copper ore, vicuña and alpaca wool, hides, sugar, nitrate of soda, and guano. The general exports do not exceed 8,000,000 dols. annually, but the government monopoly of guano yields other 8,000,000 dols. The produce of the silver mines has fallen off very materially since the end of last century, when it amounted to 5,500,000 dols. per year, while in 1855 it only amounted to 3,000,000 dols. Thus the far-famed riches of Peru are now like the legends of the past. The manufactures are not important, consisting chiefly of coarse cotton and woollen cloths made by the Indians, leather cloaks, and jewellery. Most of the finer articles of manufacture are imported from Europe and N. America.

BOLIVIA.

Boundaries.—E. and N., Brazil; W., Peru and the Pacific; S., Chilé and La Plata. Lat., 10° — 23° S.; lon., 58° — 70° 40′ W.

The extreme length from N. to S. is about 1100 miles; the greatest breadth about 800 miles. Chuquisaca, the capital, near the centre, is nearly on the same parallel as Iquique in Peru, Victoria in Brazil, Lake Ngami and Sofala in Africa, and the Society Isles in the Pacific Ocean; and same meridian as Point Gaspé in Canada, St Thomas in the West Indies, and Barcelona in Venezuela.

Area and Population.—The area is estimated at 374,000 square miles, or three times the area of the British Isles. In 1855 the population amounted to 2,326,126, being greatly less than the population of Scotland.

Political Divisions.—The republic presently consists of seven departments and two provinces, nearly all of which are named after their respective capitals.

BENI.– Exaltacion, Trinidad 4 (Mamoré, *affl.* Madeira).

LA PAZ.—La Paz 43 (La Paz, *affl.* Beni), Tipuani, n. (Beni), Sorata, n. Tichuanaca (L. Titicaca).

SANTA CRUZ.—Santa Cruz 6, San Lorenzo 4 (Flores, *affl.* Mamoré), Santiago, n., San Juan Bantista (Bartolomeo, *affl.* Paraguay).

COCHABAMBA.—Cochabamba 30, Tapacari n. (Mamoré).

CHUQUISACA.—CHUQUISACA or SUCRE 20, n. (Pilcomayo, *affl.* Paraguay).

POTOSI.—Potosi 17 (Pilcomayo).

ORURO.—Oruro 6 (Desaguadero).

COBIJA or LA MAR (Prov.).—Cobija or Puerto La Mar (Pacific), Atacama (Loa).

TARIJA (Prov.).—Tarija 5 (Tarija, *affl.* Vermejo).

Descriptive Notes.—*Exaltacion*, capital of the department Beni, or country of the Mojos, is a small town near the Mamoré, with a fine cathedral and government buildings. It is an Indian town, the inhabitants of which are employed in the manufacture of sugar. *Trinidad*, the largest town in the department, contains 4000 inhabitants. *La Paz*, near the eastern shore of Lake Titicaca, and near the base of the snow-capped mountain Illimani, is the commercial metropolis and largest town in Bolivia. It is a busy place, actively engaged in home and foreign trade. The cinchona bark obtained here is the best in the world. *Tipuani*, situated N. of La Paz, has gold mines and washings in its vicinity. *Santa Cruz*, capital of the principal rice-growing state in Bolivia, is the frontier town of the Spanish race, who do not penetrate farther inland. The inhabitants pride themselves on the purity of their Spanish accent. *Cochabamba* or *Oropesa*, a beautiful city, of 30,000 inhabitants, with a large cathedral and a magnificent palace, on an affluent of the Mamoré; it has manufactures of cotton fabrics and glass. *Chuquisaca* or *Sucre* ("place of gold"), capital of Bolivia, on the eastern side of the Andes, and at an elevation of 9342 feet above the sea, has neither trade nor manufactures, and owes all its prosperity to its being the seat of the legislature. *Potosi*, at the foot of the far-famed silver mountain of Cerro de Potosi, at an elevation of 13,330 feet above the sea. The mountain is perforated in all directions by the mines, only 26 of which are now worked, while 1800 are standing idle. Here is a mint, at which the miners find a ready market for silver and gold, and which in 1849 coined 1,621,536 dollars in silver, and 11,900 dollars in gold. The silver here was accidentally discovered by an Indian, upwards of 300 years ago. Potosi, at the height of its prosperity—about the year 1680—is said to have contained 150,000 inhabitants, and its mines to have yielded about 3,000,000,000 dols. annually. Its neighbourhood is a desert, and provisions of every kind are brought

The Aimara Indians were among the nations formerly subject to the Incas of Peru; they now dwell on the plateau of Titicaca, within the limits of that ancient empire. They number about 372,000, and are probably descended from the same stock as the Quichua Indians, whom they resemble in language, disposition, manners, and customs. They are an intelligent, industrious race, and are largely engaged in agriculture, mining, various branches of manufactures, and in pastoral occupations.

Bolivia, under the name of Upper Peru, formed part of the viceroyalty of Buenos Ayres, till, on the subversion of Spanish authority, it achieved, with Peru proper, its independence. Soon afterwards it separated from the latter country, and became an independent republic, assuming the name Bolivia, in honour of its illustrious liberator, General Bolivar, who in 1826 drew up its first constitution. The executive government is vested in a president who is elected for life; the legislative functions are exercised by a body consisting of three chambers—a senate, tribunes, and censors. The constitution makes ample provision for personal and political liberty; securing religious toleration, the freedom of the press, and the independence of the tribunals. Roman Catholicism is alone professed by the white inhabitants, but the church is not endowed by the state. The standing army amounts to 3000 men; the receipts and expenditure to nearly 2,000,000 piastres each; and the public debt to 5,850,000 piastres. Commerce is greatly restricted by the physical character of the country—stupendous mountain-chains and an arid desert separating the productive portion of the country from the Pacific, and 2000 miles of river navigation from the Atlantic, seaboard. The foreign trade is consequently very limited, consisting chiefly in the export of the precious metals, Peruvian bark, skins, soap, tobacco, and alpaca wool to Europe, and of grain and cacao to Peru; while the imports are mostly confined to iron, hardware, silk, and a few other articles. It is a singular fact that, while the rich quicksilver mines of Huancavelica are so close at hand, Bolivia annually imports 200,000 lbs. of this fluid from England, around Cape Horn, to Cobija, and thence on the backs of mules, across the cordilleras, to Potosi and other silver-mining regions.

CHILE.

Boundaries.—N., Bolivia; W. and S., the Pacific Ocean; E., the Argentine Confederation. Lat. 23°—43° 20′ S.; lon. 69°—74° W. Chilé, however, claims the much larger territory from Mexillones Bay, N. of the Tropic, to Cape Horn in Patagonia; but the claim is disputed by the Argentine Confederation.

Including the island Chiloe, the length from N. to S. is 1400 miles; while the breadth, between the crest of the Andes and the Pacific, does not on an average exceed 100 miles. Few other countries of equal dimensions enjoy so large an extent of seaboard. Santiago de Chilé, the capital of the republic, situated near the centre of the continental portion, is nearly on the same parallel of latitude as Valparaiso, Buenos Ayres, Cape Town, Sydney, and the northern extremity of New Zealand; and nearly on the same meridian as Augusta, capital of Maine, San Domingo in the W. Indies, Coro in Venezuela, and Lake Titicaca.

Area and Population.—The area is estimated at 143,500 sq. miles, or one-sixth larger than the British Isles; and the population, in 1855, at 1,439,120, being less than half the population of Scotland.

Political Divisions.—Chilé is divided into thirteen provinces, each of which, on an average, is one-third the size of Scotland; besides two colonial possessions—viz. Llanquihue, on the mainland, N. of the island Chilöe, cap. Puerto Montt (so called in honour of President Montt), and the territory of Magellan or Patagonia, cap. Punta

Arenas, on the Strait of Magellan (see under "Patagonia"). The island of Juan Fernandes, 320 miles west of Valparaiso, also belongs to this republic (see p. 637).

ATACAMA.—Copiapo 4, Port Copiapo 2 (Copiapo), Caldera (N.W. Coast).
COQUIMBO.—Coquimbo 8, Huasco (Coast).
ACONCAGUA.—San Felipe 12 (Aconcagua).
VALPARAISO.—Valparaiso 75 (Coast).
SANTIAGO.—SANTIAGO DE CHILE 80 (Maypocho, *affl.* Maypu).
COLCHAGUA.—San Fernando (Rapel).
TALCA.—Talca (Maule).
MAULE.—Villa de Cauquenes n. (Maule).
UEBLE.—Chillan (Ueble, *affl.* Maule).
CONCEPCION.—Concepcion 10, Talcahuana (Coast).
ARAUCO.—Arauco 1 (Coast).
VALDIVIA.—Valdivia 5 (Valdivia).
CHILÖE.—San Carlos 2, Castro 4 (Island Chilöe).

Notes on Towns.—*Copiapo*, the most northern town in Chilé, and in the centre of the principal mining district, exports silver, copper, mercury, copper ore, and various other mineral products. *Caldera*, a seaport town, 40 miles north of Copiapo, with which it is now connected by a railway, which, in some places, is carried to a height of 6000 feet above the level of the sea—a higher elevation than has been attempted in any other part of the world (see below, p. 664). *Coquimba*, one of the chief seaport towns of the republic, exports copper ore, silver, chinchilla skins, &c. *San Felipe*, formerly *Aconcagua*, is a well-built town, regularly laid out, and has mines of copper in the vicinity. *Valparaiso*, on the Pacific coast, a large and flourishing city, and one of the principal seats of trade on the whole west coast of America, possesses an extensive foreign trade, exporting wheat, hides, tallow, gold, silver, copper, indigo, wool, and drugs. *Santiago de Chilé*, capital of the Chilian republic, situated amid the sublimest scenery, near the foot of the Andes, is a handsome town, laid out with great regularity; but the houses are of one storey, owing to the prevalence of earthquakes. It is connected by a railway with Valparaiso, 60 miles distant, and contains a university. *Talca*, a small town connected with the capital by a railway. *Chillan*, capital of the province Ueble, is a small town, 100 miles N.E. of Concepcion. *Concepcion*, at the mouth of the Biobio, contains a college, and possesses an excellent roadstead: it was nearly ruined by the great earthquake of 1835. *Valdivia*, being the penal settlement of Chilé and Peru, is 16 miles distant from Port Valdivia, one of the best seaports in the country. *San Carlos*, capital of island Chilöe, which forms the most southern province in Chilé, exports provisions, timber, and hides. Coal or lignite exists in the neighbourhood, but is not wrought.

Surface and Climate.—Chilé consists of a long, narrow territory, isolated from the rest of the continent by the majestic chain of the Andes, which here form a single ridge, with an average elevation of 12,000 feet. Near the centre of the chain stands the stupendous Aconcagua, 23,910 feet above the sea, and forming the culminating point of the New World.

Aconcagua is not a volcano, but no fewer than 14 volcanic peaks are enumerated among the Chilian Andes, among the loftiest of which are Chillan and Villarica, each of which attains to a height of 16,000 feet. Few of these volcanos are now in a state of activity; but earthquakes are of common occurrence, and frequently cause tremendous devastation. In general, the country is very hilly, being crossed from east to west by innumerable offshoots from the Andes, gradually descending in elevation as they approach the ocean, and enclosing between them deep and fertile valleys watered by mountain torrents, the principal of which are the Biobio in the south, the Maypu and Maule in the centre, and the Chuapa in the north. North of the Chuapa the surface is very irregular, rocky, nearly destitute of rain, and, with the exception of a few spots on the banks of the rivers, almost barren and uncultivated. Between the Maule and the Biobio the land becomes more level and fertile; the climate is hot and dry, with occasional showers, but near the Biobio rain falls regularly in winter. South of this river the rains are again irregular, but fall so heavily as to cause a general suspension of all active operations. Rain falls only during the winter months, from June to September; and after they have occurred, the whole country, throughout the more favoured regions, is decked with flowers. The months of January and February are the hottest in the year, the thermometer then frequently rising to 90° and 95° Fah. in the shade. In the central parts of the country storms of hail, thunder, and lightning are common in the winter season. Snow covers the loftier summits of the Andes throughout the year, the lower limit of the snow-line being, in the N. 17,000 feet, in the middle 12,780 feet, and in the S. 8300 feet.

Natural Productions.—Chilé is by far the most flourishing of the Spanish-American republics—the salubrity of her climate, the fertility of her soil, the abundance of her natural resources, and, above all, her proximity to the ocean, giving her a decided superiority over the other countries on the western side of the continent.

Her mineral and agricultural resources are especially great, the former embracing gold, silver, copper, lead, iron, zinc, mercury, antimony, manganese, arsenic, tin, sulphur, nitre, salt, coal, and lignite. Silver mines occur in the southern Andes, but silver and copper mines are chiefly worked in the otherwise barren provinces of the north. The extraction and exportation of copper has, of late years, rapidly increased, and this commodity now forms the grand staple of the country. The gold was formerly collected from the sands of the rivers, but this branch of industry is no longer remunerative. Lead and iron, though abundant, are not wrought; and though coal is plentiful along the river Biobio, the number of mines in operation is not considerable. The working of the coal mines of Lota and Coronal, is gradually extending, and though the coal is inferior in heating power to ordinary English coal, it is extensively used for steam and smelting purposes, and will, no doubt, eventually preclude the use of English coal on the coast of Chilé. The central and southern provinces are well adapted for pastoral and agricultural purposes; but gigantic forests cover the greater portion of the surface. Vast herds of cattle are reared, a single proprietor sometimes possessing from 10,000 to 20,000. Agriculture is in an extremely backward state, all the methods of improved husbandry used in this country being unknown; but maize is grown extensively in the north, wheat, barley, and other European grains in the centre and south. Flour forms the staple food of the inhabitants, and is exported in considerable quantities. Leguminous plants, especially beans, are raised in great quantities. Chilé is the native region of the potatoe, which is found wild on the slopes of the mountains. Hemp grows to perfection to the north of the river Maypu—the quality being superior to that grown in Russia. Fruits are so numerous and abundant that, in many places, they may be had without money: the figs and olives are of the best quality, and the grape is cultivated with success. The Araucaria, or Norfolk Island pine, is almost confined to the Indian country south of the Biobio, where the natives subsist entirely on its seed, which they collect and bury in pits for winter use. Among the animals of prey the chief place must be assigned to the puma or American lion, and to the condor, a magnificent species of vulture peculiar to the Andes, but most common in Peru and Chilé. The country enjoys as complete an immunity from noxious animals as Ireland, there being but one species of serpent, and even that is perfectly harmless.

Ethnography.—In the northern and central provinces the population consists for the most part of the descendants of the Spaniards; but to the south of the Biobio the country is inhabited almost exclusively by Indians, who belong to the Araucanian nation, and number about 70,000 persons.

Though nominally subject to the Chilian sway, the Indians have hitherto stoutly maintained their independence—a privilege which they are likely soon to lose, now that the Chileños have planted within the limits of their territory the colony of Llanquihue. They are more advanced in civilisation than the wandering tribes of the pampas; they excel in weaving, in the manufacture of pottery-ware, and in cultivating the land; but they are said to be addicted to habits of intemperance. The whites, or Chileños, are described as contrasting favourably with those of the same race in other parts of Spanish America, especially in activity and industry. The advance of civilisation among them is rapid, and more has been done by the Government in diffusing the benefits of education than in any of the neighbouring republics. In 1858, there were 32,000 pupils attending school, or one-forty-fifth of the entire population. The religion of the state is the Roman Catholic, and the public exercise of any other form of worship is excluded by law. Yet there are in Valparaiso two Protestant places of worship, whose existence is not unknown to the Government. The first of these was erected in 1855. The great mass of the people remain in the grossest ignorance, and morality is at a very low ebb. Illegitimacy is fearfully prevalent among the humbler classes of society. In some parts of the country, from 27 to 30 per cent of the population have a stain on their birth. Closely connected with this is the extraordinary rate of mortality among the young. Out of 1050 interments at one cemetery in Valparaiso, in 1856, no fewer than 745 were of children under seven years of age!

Chilé was seized by the Spaniards after the conquest of Peru, and in 1541 a settlement was formed at Santiago. The struggle of the colonists for independence began in 1810, and terminated successfully in 1818, by the battle of Maypu, and the formation of a republic. According to the constitution of 1833, the government is vested in a president elected for five years, a senate of 20 members, who hold office for nine years, and a chamber of deputies, consisting of one for every 20,000 inhabitants. The army, in 1856, amouuted to 56,182 men; and the navy to one corvette with 4 smaller vessels, carrying 66 guns. In 1855 the receipts amounted to 6,287,000, the expenditure to 5,484,000, and the public debt to 6,480,000 dollars. At the end of 1856 the mercantile marine consisted of 265 ships, carrying 620,000 tons; the value of the exports in the same year was 18,159,000 dollars, and of the imports 19,804,000 dollars. The exports consist chiefly of copper, silver, wheat, wool, and hemp; and the imports of cottons, woollens, hardware, silk, paper, wine, sugar, tea, and brandy. As compared with the other South American republics, Chilé has made rapid progress in almost every department of natural industry. In the 12 years from 1844 to 1855 inclusive, she made very great progress in the development of her resources. Owing to the great diminution, however, in the yield of her silver mines, and the restricted demand, since 1855, for her agricultural produce, her exports have not increased during the last few years. The want of roads and railways has hitherto greatly affected the productive industry of the country; but very recently the construction of railways has made considerable progress. That from Caldera to Copiapo was constructed by an eminent English engineer, named Wheelwright, and he is now (1860) engaged in the survey of a line from Caldera, on the N.W. coast of Chilé, to Cordova and Rosario in the Argentine Confederation, with the view of connecting the Pacific with the Atlantic. He proposes to carry the line across the Andes, in lat. 27° S., through the San Francisco Pass, which is the only pass through the Chilian Andes that is not blocked up with snow for several months in the year. Considering that this pass has an elevation of 16,000 feet above the sea, Mr Wheelwright's railway, if once completed, will be one of the greatest trophies of engineering skill in modern times.—(See above under *Caldera.*)

LA PLATA, OR THE ARGENTINE CONFEDERATION.

(INCLUDING BUENOS AYRES.)

Boundaries.—N., Bolivia; W., Chilé; S., Patagonia; S.E., the Atlantic; E., Uruguay, Brazil, and Paraguay. Lat. 22°—41° S.; lon. 54°—70. W.

The extreme length from north to south is 1350 miles, and the average breadth about 700 miles. Buenos Ayres, the capital (lat. 34° 36′, lon. 58° 23′) is in the same latitude as Cape Agulhas the southernmost extremity of Africa, Adelaide and Sydney in Australia, Victoria in the north of New Zealand, and Santiago the capital of Chilé; and in the same longitude as Cape Breton, George Town in British Guiana, Asuncion in Paraguay, and the Falkland Isles.

Area and Population. — Including Buenos Ayres, the area is estimated at 1,120,000 square miles, or more than nine times the area of the British Isles; while the population, in 1857, amounted to 1,224,000, or only one person to each square mile. The area of Buenos Ayres alone is given at 200,000 square miles, and the population, in 1854, at 350,000.

Political Divisions.—The Confederation embraces fourteen independent states, which are under the authority of a despotic military governor, called the Director of the Argentine Confederation. In 1853 Buenos Ayres detached itself from the union, and elected a military dictator of its own; but after a separate existence of seven years it has united itself afresh to the confederation.

BUENOS AYRES.—Buenos Ayres 122 (Rio de la Plata), Rosario (Paraná).
PARANA or ENTRE RIOS.—Paraná or Bajada de Santa Fé 15 (Paraná).
SANTA FE.—Santa Fé 4, (Salado, *affl.* Paraná).
CORRIENTES.—Corrientes 8 (*confl.* Paraná and Paraguay).
JUJUY and SALTA.—Salta 9, n. (Salado, *affl.* Paraná).
TUCUMAN.—Tucuman 8, n. (Medanos, *affl.* Dulce).
CATAMARCA.—Catamarca 4, n. (Medanos)
SANTIAGO DEL ESTERO.—Santiago 4, Matara (Dulce).
RIOJA.—Rioja 9, n. (Vermejo, *affl.* Lake Guanacache).
CORDOVA.—Cordova 14 (*affl.* Lake Salado).
SAN JUAN.—San Juan de la Fronterá 8 (Patos, *affl.* Lake Guanacache).
MENDOZA.—Mendoza 12 (Lake Mendoza).
SAN LUIS.—San Luis de la Punta 2, on a river which loses itself in the sand.

Descriptive Notes. — *Buenos Ayres*, so called on account of its salubrity, capital of state of same name, and now again of the Argentine Confederation, is a large, handsome city, situated on the south side of the estuary of La Plata, 150 miles from its mouth. It is the chief port of the confederation, and one of the principal commercial cities in South America. In 1857 the exports were valued at 76,000,000 francs, and the imports at 56,970,000 francs—the former consisting chiefly of hides, skins, bones, and tallow. The estuary here is 36 miles wide, but the navigation is obstructed by rocks, sandbanks, and tempestuous winds from the S.W. The city was founded in 1535; was made the seat of a Spanish viceroyalty in 1775; and was taken by the English in 1806, but retaken the same year by the Spaniards. *Rosario*, on the right bank of the Paraná, 190 miles above Buenos Ayres. This town is intended to be the terminus of the Chilian railway across the Andes—the other terminus being Caldera, in the N.W. of Chilé (see under "Chilé") *Paraná*, formerly *Bajada de Santa Fé*, capital of state of same name, and of the Argentine Confederation from 1853 to 1860, is situated on the east bank of the Paraná, and is an active bustling town. *Corrientes*, at the confluence of the Paraguay and Paraná, is admirably situated for becoming the emporium of an extensive district of country. *Salta* is noted for its trade in hides and mules. *Tucuman* or *San Miguel de Tucuman*, capital of the finest and richest state in the confederation. Here, in 1816, the first congress of deputies from the several provinces of the confederation proclaimed their independence. *Cordova*, on the main road from Buenos Ayres to Potosi, and on the line of the proposed railway across the Andes, has some manufactures of cloth and a trade in wine. It was at one time the seat of a university held in great repute, and of the celebrated library belonging to the Jesuits, which, on their expulsion, was transferred to Buenos Ayres. *Mendoza*, on the eastern slope of the Andes, is a main entrepôt for the trade between Buenos Ayres and Chilé, with which latter it communicates by the mountain passes of Uspallata and Portillo.

Surface and Climate.—Excepting the portions of the country forming the eastern slope of the Andes, and some minor tracts east of the river Paraná, which are mountainous, the whole surface of the Confederation is embraced within the basin of the Rio de la Plata, and forms two immense plains of only a few feet in elevation above the sea.

The southern plain, named the *Pampas*, is a dead level, destitute of trees, but covered alternately with luxuriant pasturage, and vast crops of gigantic thistles, and interspersed with a multitude of salt lakes, some of which are of large size. The channel of the Paraná, at a distance of 400 miles from its mouth, is said to be only one foot in elevation above its mouth. The northern part of the country belongs to the plain of *Gran Chaco* or great desert, which extends from the 28th to the 18th south parallel, and from longitude 58° to 63° W. Besides the north of La Plata, it embraces a large section of eastern Bolivia, being bounded on the east by the Paraguay, and traversed by its tributaries. It has an average elevation of from 300 to 500 feet; the northern portion is covered with grass, while the southern, consisting of an arid and desert plain, is inhabited by roving Indians. The climate is characterised by great diversity, but is in general hot and very dry—the Patagonian Andes on the one side, and the mountains of Brazil on the other, intercepting the rain-bearing winds from the two great oceans. At intervals of about fifteen years apart, the rains are wholly suspended in the interior of the country, the ground assumes the appearance of a dusty high-way, and great suffering ensues from want of food and water. "The period from 1827 to 1830 is well remembered as the *Gran Seco*, or great drought, when all vegetation failed; the small rivers became highly saline, and the lowest estimate of the loss of cattle in the single province of the capital, was taken at one million head." The pampas are also subject to violent hurricanes, called *pamperos*, accompanied with terrific thunder and lightning. These carry so much sand into the air as to produce darkness at noon in Buenos Ayres. The mean annual temperature ranges from 59° in the S. to 73° in the N.; January, from 68° to 77°; and July, from 50° to 68° Fah. In general the heat is not excessive, and the climate is more salubrious than that of other countries equally near the tropics.

Natural Productions.—La Plata is less noted for its minerals than any of the other Spanish American territories.

Small quantities of gold, silver, copper, and lead, together with sulphur, alum, and mineral pitch, are found on the slopes of the Andes; but few, if any, of the mines are worked. Coal is reported to be plentiful in the S.W.; salt effloresces in large quantities on the surface of the plains in the Great Salina, where salt lakes abound. At the bottom of one of these lies a cake of salt so thick and hard that even iron tools break it with difficulty. Wheat, maize, barley, and other grains, and numerous fruits, are grown in the southern states; and in some of the northern tracts, tobacco, sugar, cotton, indigo, rice, the coca plant, and other tropical productions, are cultivated in most of the lower valleys. Only a very limited amount of attention is bestowed upon agriculture, and all the processes of husbandry are in the most backward condition. The northern region produces some wild plants of great use; as the algaroba tree, from the fruit of which, mixed with maize, the Indians make cakes, and, by fermentation, chica, an intoxicating spirit; the palm tree; maté or Paraguay tea; the cactus, which bears the cochineal insect; the aloe, from which yarn and ropes are made; and various plants used in dyeing. In the Gran Salina a kind of salsola grows, from which soda is extracted. But the principal wealth of the country consists in its immense herds of horses and oxen, which wander about in the pampas almost in a wild state. Most of the South American wild animals are found in La Plata, as the puma, jaguar, armadillo, tapir, tajassoo, biscacho (a kind of rabbit which is very numerous, the skins of which are now brought to England for furs), deer, and some kinds of monkeys. The guanaco is found in the plains and on the mountains, but the wild llamas, vicuñas, and alpacas, only in the cold regions on the elevated table-lands. The water-hog or carpincho, the largest known rodent, is very common on the banks of the Paraná. The most common birds are the emu, condor, green parrots, wild-ducks, pigeons, quails, the carrion-vulture, and several other rapacious birds. There are many kinds of noxious insects, and locusts frequently destroy the crops. Along the coasts, whales, sea-lions, and sea-elephants are numerous.

Ethnography.—The Creoles, who are of Spanish descent, number about 1,000,000; the Indians, about 200,000; besides whom there are 25,000 Negroes.

The Creoles are most numerous in Buenos Ayres and the other southern states, while the Indians are chiefly located in the region north of the salt lakes. In the Great Salina, and in the Despoplado, they belong to the widespread Quichua or Peruvian nation, whose language they continue to speak. East of the Paraná they form a section of the great Guarani family, whose numerous tribes cover the whole interior of Brazil. Those residing in the Pampas appear, from their language, to belong to the Araucanian family, are less civilised than the Quichua, are broken up into numerous distinct tribes, and live in villages separate from the white population. The Creoles, or Spaniards, do not lead the same indolent and voluptuous life as in the neighbouring Spanish republics, but busy themselves in pastoral and agricultural operations. The *Guacos*, or Creoles inhabiting the Pampas, are admirable horsemen, expert in using the *lasso* and *bolas* (by which the wild cattle and birds are captured) hospitable to strangers, but turbulent among themselves, and much addicted to robbery—a crime facilitated by the gigantic vegetation of the plains. The Roman Catholic is almost exclusively the religion of the white population, as in all the Spanish-American republics; but other denominations are tolerated. There are two Protestant churches in Buenos Ayres. Convents have been abolished, and the Jesuits, who had important missions in the territory east of the Paraná, have been long ago expelled. Primary schools of a very inefficient character exist in some of the towns, but are unknown in the rural districts; and the education of the people is sadly neglected. The university of Buenos Ayres was recently suppressed, but there are still two colleges for secondary instruction. The government is nominally republican, and the legislative power, in theory, is vested in a junta of 44 deputies, one-half of whom are annually re-elected by popular suffrage, and in a senate of two deputies for each of the confederated states. Practically, however, the president assumes the powers of a military dictator, carrying out his own absolute will in the most arbitrary manner. It is painful to see how the country has hitherto been misgoverned, being for the most part either torn by internal dissensions, or at war with the neighbouring republics. Omitting Buenos Ayres, at that time not embraced in the confederation, the army in 1857 amounted to 4412 men; while that of Buenos Ayres numbered 6370 men, and the navy of the latter consisted of two steamers, two corvettes, and four smaller war-vessels. In the same year the receipts of the confederation amounted to 2,226,000 piastres, and the expenditure to 3,300,000 piastres. The receipts and expenditure of Buenos Ayres are fully double of those of all the other states. The exports consist of hides, tallow, wool, hair, horns, jerked-beef, horses, mules, asses, and a few minor articles, the annual value of which amounts to about 15,000,000 dollars; while the value of the imports, which consist chiefly of British cottons, silk, linen, and woollen manufactures, sugar, coffee, tobacco, wine, brandy, and salt, is nearly the same—(see above, note on "Buenos Ayres.") Home manufactures are inconsiderable, consisting chiefly of coarse woollen stuffs and morocco leather; but the Indians manufacture yarn, ropes, fishing-nets, and other articles, from the fibres of the aloe. The foreign commerce, with the exception of that of Buenos Ayres, is insignificant; but a good deal of internal traffic is carried on between the different states, the roads being better than in most other South American states, and the navigable rivers affording boundless scope for inland trade. For railways, see under "Chilé," p. 664.

PARAGUAY AND URUGUAY.

Both these republics, when under Spanish rule, formed part of the viceroyalty of Buenos Ayres. Upon the declaration of independence, Paraguay refused to join the Argentine Confederation, and became a distinct state under the dictatorship of the notorious Dr Francia; while Uruguay, or *Banda Oriental*, so named because it formed the *eastern boundary* of the Spanish possessions in South America, was seized by Brazil, but achieved its independence in 1828.

Boundaries.—Paraguay is bounded on the N. by Brazil; on the W. by the Paraguay, separating it from the northern provinces of La Plata; and on the S. and E. by the Paraná, which divides it from Brazil. Lat. 21°—27° 20′ S.; lon. 54°—58° 40′ W. Uruguay has Brazil on the N. and N.E.; the river Uruguay, separating it from the Argentine Confederation, on the W.; the Rio de la Plata, which lies between it and Buenos Ayres, on the S.; and the Atlantic Ocean, on the S.E.

Asuncion, the capital of the former state, has the same latitude as Cape Corrientes in East Africa, the centre of Australia, and the northern boundary of Chilé; while Monte Video, the capital of the latter, is nearly on the same parallel as Buenos Ayres and Santiago de Chilé.

Area and Population.—The area of Paraguay is estimated at 86,000 square miles, or considerably more than that of Great Britain; while Uruguay has nearly the same magnitude as the British Isles—being 120,000 square miles. The population of the former state, in 1858, was 600,000, being less than the population of Staffordshire; while that of the latter was 177,300, or a little more than that of Oxfordshire.

Political Divisions.—The former republic is divided into 8, and the latter into 9 departments, which are named for the most part after their respective chief towns.

PARAGUAY.—ASUNCION 25, Neembucu 2, Villa Real de Concepcion 4 (Paraguay), Villa Rica, n. Santa Maria de Fé (Tebicuary).
URUGUAY.—MONTE VIDEO 35, Maldonado 2, La Colonia 3, San José, n. (Rio de la Plata).

Descriptive Notes.—*Asuncion* or *Assumption*, at the confluence of the Paraguay and Pilcomayo, was founded in 1535 by a colony of Spaniards. It is ill-built and irregular; most of the houses are of earth; but it possesses considerable trade in tobacco, sugar, hides, timber, and especially in *yerba maté* or Paraguay tea, which is grown abundantly in the vicinity and exported to Buenos Ayres, Tucuman, Chilé, Peru, and other parts of South America. *Villa Real de Concepcion*, the depôt to which the Paraguay tea is brought from the forests on its way to Asuncion. *Monte Video*, so named from a mountain overlooking it, on which stands a light-house, is an important commercial city, the rival of Buenos Ayres, from which it is distant 125 miles, and which it greatly surpasses as a seaport. The houses are of stone or brick, flat-roofed, and unpaved; the climate is damp, the summer heat oppressive, and storms frequent; while the water has to be carried a distance of two miles. The chief trade is in tallow, hides, and dried or jerked beef, the first two of which are exported to Europe, and the last to the West Indies.

Surface and Climate.—The surface of Paraguay is hilly on the Brazilian frontier, flat in the centre, and marshy in the S.W.; while the climate, though tropical, is greatly modified by the inequalities of the surface.

Uruguay is level along the coast and destitute of wood, but undulating in the interior (except in the centre where it is mountainous), full of ravines and heights clothed with forests, and abounding with wild animals. The climate, though damp, is generally temperate and healthy; in winter cold winds and heavy rains are prevalent; but ice is unknown, except on the higher elevations.

Natural Productions.—These are, in general, the same as in the Argentine Confederation, to which, indeed, both countries naturally belong.

In the forests of Paraguay are found at least 60 varieties of timber, admirably adapted for all purposes in which elasticity, buoyancy, or durability, is required. Many of the hills are literally covered with the *yerba maté* or Paraguay tea, which is largely exported to most parts of South America, and which is no contemptible substitute for the tea of China. At every meal, and at every hour of the day, it is drunk. Hot water is poured on the powdered leaf, then a lump of burned sugar, and sometimes a few drops of lemon-juice are added, and the infusion is drunk off quickly, as it soon becomes black if allowed to stand. The Creoles are passionately fond of it, and never travel without a supply of the leaf. Numerous virtues are ascribed to it: like opium, it is said to calm the restless, and to arouse the torpid; but it differs from opium and Chinese tea in being slightly aperient, and in acting on the kidneys; while long indulgence or immoderate consumption of it is apt to induce diseases similar to those which follow the excessive use of ardent spirits. Cattle and horses form the principal wealth of the population in Uruguay, their produce consisting of hides, horns, jerked-beef, and tallow, forming the main articles of export. In 1856 the exports of Paraguay amounted to 5,500,000, and the imports to 4,000,000 francs; while the exports of Uruguay in the same year were 51,519,000, and the imports 22,931,000 francs.

Ethnography.—In Paraguay the great bulk of the population consists of Indians of the Guarani nation, who here approach nearer the whites who reside among them than any other of the aboriginal tribes of America.

Owing to the unremitting care of the Jesuits for about a period of eighty years, they have adopted, to a great extent, the agriculture and other arts of Europe. When the Jesuits were expelled in 1767, the "Missiones" were inhabited by more than 100,000 civilised Indians, nearly one-half of whom resided in Paraguay. Civil wars and misrule have seriously impeded the prosperity of Uruguay. It revolted from Spain in 1811, but from 1814 to 1840, it was ruled by a native Creole, named Francia, under whom, and for four years after his death, all foreigners were strictly excluded; while more recently the country has had to contend unceasingly against the intrigues and hostility of Buenos Ayres. Of late, however, there has been an improvement; while it is pleasing to learn that a colony of Protestant Vaudois has recently been established in the country, from whose superior culture and activity much good may be augured.

PATAGONIA AND TIERRA DEL FUEGO.

Boundaries.—This extensive country, comprising the entire southern extremity of South America, is bounded on the N. by La Plata and Chilé; on the W. by the Pacific; on the S. by the Antarctic Ocean; and on the E. by the Atlantic.

Extending from lat. 38° 45′ to 55° 58′ S., it is about 1200 miles long, by 550 miles wide at its broadest part. The area is estimated at 300,000 square miles; and the population at 400,000. The northern extremity is nearly on the same parallel as Cape Egmont in New Zealand, Cape Wilson the southern extremity of Australia, Amsterdam Island midway between Australia and Cape Colony, and is 260 miles S. of Cape Agulhas, the southern extremity of Africa; while Cape Horn, in Tierra del Fuego, is 1470 miles S. of Cape Agulhas. The whole of Patagonia, north of Tierra del Fuego, is now claimed as a colonial possession of Chilé, which has given it the name of the Territorial Colony of Magellan; capital, Punta Arenas, on the Strait of Magellan (see p. 661). Patagonia has been very imperfectly explored; but it is known that the western shore is deeply indented by the ocean, and lined by numerous islands and bold projecting headlands; that the Andes extend in one immense unbroken chain along the western side, having an elevation ranging from 8000 feet in the north, to less than 3000 feet in the south, and containing numerous volcanic peaks, among the loftiest of which are Minchinmadava and Yanteles (p. 638); and that the mountainous region is densely clothed with forests, the climate being excessively moist, owing to the prevalence of westerly winds. The eastern part of the country, on the other hand, is arid and sterile, the surface consisting of a series of terraces of tertiary sandstone, clay, earth, and gravel. Wheat, maize, and pulse, are raised in small quantities on the right bank of the Rio Negro, which separates the country from the territory of La Plata. Large flocks of wild cattle and horses roam over the country, but the guanaco is the characteristic quadruped of Patagonia; and wolves, foxes, pumas, armadilloes, and numerous mice are found; birds comprise the condor, hawk, ibis, emu, and vast numbers of sea-fowl; while seals and other marine animals frequent the coasts. The Patagonian Indians, described by the early voyagers as a race of giants, are a tall muscular race, generally averaging about six feet in height, leading a nomadic life, and subsisting by the produce of the chace and by fishing. The shortness of their limbs, and the disproportionate length of the upper part of the body, make them appear remarkably tall on horseback, as they almost always are when out of doors; but the natives of the mountain region, and of the Fuegian Archipelago, are a stunted race, sunk in the deepest degradation (p. 637).

River System of South America.

The rivers of South America belong to four great basins—viz. those of the Pacific, Atlantic, Carribbean Sea, and the continental basin of Lake Titicaca.

Basins inclining to the Caribbean Sea.

Rivers.	*Towns.*
Magdalena,......	Mompox, Ocaña, n. Honda.
San Francisco,	BOGOTA.
Cauca, *l*.......	ANTIOQUIA, Medellin, Cartago, POPAYAN.
Sogamozo,....	Boyaca, Socorro, n. TUNJA.
Caribbean Sea, ..	CARTAGENA, STA. MARTA.
G. of Venezuela,.	Maracaybo, Alta Gracia, Coro.

Rivers.	*Towns.*
L. Maracaybo,....	Truxillo, n.
Zulia:	PAMPLONA, n.
Chama,........	Merida.
Tocuyo,.........	Carora, Tocuyo.
Co. Venezuela, ..	Puerto Cabello, Valencia, n. La Guayra, CARACCAS, Barcelona, Cariaco.
Manzanares,.....	Cumaná, Cumanacoa.
G. of Paria,.....	Maturin.

Basins inclining to the Atlantic.

Orinoco, ...	Angostura.
Apuré, *l*.......	San Fernando, Achaguas, Varinas, n.
Guarica, *l*...	Calaboza.
Portuguesa, *l*	San Carlos, Araure, Barquisimeto.
Guanaré,....	Guanaré.
Guaviare, *l*....	San Juan de los Llanos.
Demerara, ...	GEORGE TOWN.

Berbice, ...	New Amsterdam.
Surinam, ...	PARAMARIBO.
Co. Guiana,.....	Amsterdam, CAYENNE.
Amazon,........	Macapá, Santarem, Abidos, Rainha, Coary, Olivença, San Borja, Santiago, Caxamarca, Caxamarquilla, Guamachuco, n. Huari.

Basins inclining to the Atlantic—Continued.

Rivers.	*Towns.*
Topajos,	Santarem.
Oru,	Diamantina.
Madeira,	Balsamo, Exaltacion, Trinidad, Lorenzo, Cochabamba.
Beni, *l.*	LA PAZ.
Guaporé,	Matto Grosso.
Flores, *l*	Santa Cruz.
Rio Negro, *l.*	Manós or Barva de Rio Negro, Barcellos, Moreria
Ucayali and Apurimac,	Cuzco, Abancay.
Unini, *l.*	Tarma, n. on the Chancomacho.
Vilcomayo,	Urubamba, n.
Jauja, *l.*	Huamanga, n. Huancavelica, Jauja, Junin.
Huallaga,	Tarapato, n. Huanuco, Pasco.
Mayo, *l.*	Mayobamba.
Pastoza, *l*	Riobamba, Ambato, n. Tacunga.
Pauté, *l*	Cuença.
Barranca, *l.*	Caxatambo.
Tocantins,	Parà or Belem, Cameta.
Araguay, *l.*	No towns.
Vermelho,	Goyaz or Villa Boa.
N. Co. Brazil,	Bragança.
Maranhao,	Maranhao, Alcantara.
Itapicuru,	Caxias.
Paranahyba,	Paranahyba, Oeiras, n.
Croyhu,	Villa Vicosa.
Ceara,	Ceara.
Jaguaribe,	Aracati, San Bernardo, Lavras, Ico, San Joaõ do Principe.
Quixeramobim, *l.*	Campo Mayor.
Saõ Gado,	Bom Jardim.
E. Co. Brazil,	Natal, Parahyba, Pernambuco, Goyana, n. Porto Calvo, Alagoas, n. Macayo.
San Francisco,	Penedo, Salgado.
Velhas,	Sabara, Cahcté.

Rivers.	*Towns.*
Vazabarris,	Sergipe, n.
Itapicuri,	Jacobina.
All Saints' Bay,	Bahia or San Salvador.
Paraguaco,	Caxoeira.
R. Grande,	Belmonte.
Diamond, *l.*	Diamantina.
E. Co. Seguro,	Porto Seguro, Caravellas.
Doce,	Piranga, n.
Piranga, *l.*	Piranga, Mariana, Ouro Preto, n.
S.E. Co. Brazil,	Victoria, Benevente, Sequarema, Marica, RIO DE JANEIRO, Parati, San Sebastiaõ, Santos, Iguape, Antonina, Desterro.
Lake Patos,	San Pedro, Porto-Alegre.
Jacuy,	Rio Pardo.
Rio de la Plata,	Maldonado, MONTE VIDEO, La Colonia, San José; Rosario, PARANA, SANTA FE, CORRIENTES, Santa Maria de Fé.
Uruguay, *l.*	La Cruz.
Quarto,	SAN LUIS.
Salado,	SANTA FE, Matara.
Paraguay,	CORRIENTES, Neembucu, ASUNCION, Villa Real de Concepcion.
Vermejo,	Salta, Jujuy, n.
Tarija, *l.*	Tarija.
Pilcomayo,	ASUNCION, CHUQUISACA, Potosi, n.
Lorenzo, *l.*	Cuyaba, n.
Tebicuary,	Santa Maria de Fé, Villa Rica.
Curitiba, *l.*	Curitiba.
Anhernby,	Sao Paulo, Porto Feliz.
Para or Grand River, *l.*	San Joao del Rey, Barbacena.
Verde, *l*	Campanha, Baependi.

Basins inclining to the Pacific.

Str. of Magellan,	PUNTA ARENAS.
Chilöe Island,	San Carlos, Castro.
Co. Chilé,	Valdivia, Arauca, Talcahuana, Coquimbo, Huasco, Caldera.
Biobio,	Concepcion.
Maule,	Cauquenes, Talca.
Ueble,	Chillan.

Rapel,	San Fernando.
Maypu,	SANTIAGO DE CHILE, n.
Maypocho,	Santiago de Chilé.
Anconcagua,	Valparaiso, n. Quillota, San Felipe.
Copiapo,	Port Copiapo, Copiapo.
Co. Bolivia,	Cobija.
Loa,	Atacama.

Basins inclining to the Pacific—Continued.

Rivers.	*Towns.*	*Rivers.*	*Towns.*
Co. Peru	Iquique, Tarapaca, n. Arica, Islay, Pisco.	Piura,	Piura, Sechura, Payta.
Tacna,	Tacna.	G. of Guayaguil,	Tumbez, Guayaquil.
Ilo,	Moquegua.	Esmeraldas,	Esmeraldas, QUITO.
Quilca,	Arequipa.	Mira,	Ibarra, Otovalo.
Rimac,	LIMA, Callao.	Patia,	Pasto.
N.W. Co. Peru,	Huauri, Truxillo, Lambayeque.	G. of Panamá,	PANAMA.
		Montejo Bay,	Santiago de Veragua.
		David,	David.

Basin of Continental Streams.

Lake Titicaca,	Puno, Chuquito.	Desaguadero	Oruro.

OCEANIA.

Oceania is the name given by modern geographers to a sixth division of the globe, comprising all the islands and archipelagos in the Pacific Ocean, from lat. 27° 44′ N. (Bonin Is.) to 56° S. (Macquarie Is.); and from lon. 95° E. (Sumatra) to 110° W. (Easter I.).

It thus embraces 84° of latitude, and 153° of longitude. Its extreme length from Achen in Sumatra to the meridian which passes through Cape San Lucas in Old California is upwards of 10,000 miles; while the breadth, from north to south, is more than half that distance. The aggregate area and population are extremely doubtful, as many of the islands have been but recently discovered, while all of them are as yet very imperfectly explored. Probably, however, the former does not fall short of 4,500,000 square miles, or one-fifth larger than the continent of Europe; while the latter is generally estimated at about 21,000,000, thus not exceeding the population of Great Britain at the last census. Antarctica, however, or the supposed continent lying within the Antarctic Circle, and including Enderby Land, South Shetland, Louis Philippe Land, Trinity Land, and Graham Land, is not included within the limits of Oceania—(see p. 25).

Divisions.—Oceania is now usually divided into four great sections, which are tolerably well defined, not only by geographical position, but also by the plants, animals, and races of man which inhabit them. (See Map of Oceania in Johnston's *School Atlas of General Geography.*)

These large divisions are—1. Australasia or Melanesia, in the south-west, embracing the continent of Australia, Papua, Tasmania, New Zealand, and numerous smaller islands contiguous to them. 2. Malaysia, also called the Eastern, or the Indian Archipelago, in the north-west, embracing the numerous islands and archipelagos that extend from the north-western shores of Australia and New Guinea to Further India and China. 3. Micronesia, formerly reckoned a part of Polynesia, in the north-east, and consisting of the numerous small islands lying north of the equator and east of the Malay Archipelago. 4. Polynesia, or the South Sea Islands, comprising the numerous archipelagos in the South Pacific Ocean east of Australasia, and between the equator and the 30th degree of S. latitude.

AUSTRALASIA.

The first of the above-named divisions, termed Australasia from its southern position in relation to Asia, and Melanesia from the dark complexion of its inhabitants, lies about midway between

Africa and South America, having Malaysia on the N.W., the Indian Ocean on the W. and S., and the South Pacific Ocean on the E. and N.E. It extends from the equator to lat. 56 S., and from lon. 113° to 180° E. The total area is supposed to amount to about 3,428,000 square miles—that is, to the area of Europe without the islands; and the population to about 2,460,000.

This area embraces the continent of Australia, Tasmania or Van Diemen's Land, New Zealand, Auckland Isles, Chatham Isles, Norfolk Island, New Caledonia, New Hebrides, Queen Charlotte Isles, Salomon Isles, the Louisiade Archipelago, New Britain, New Ireland, Admiralty Isles, Papua or New Guinea, Arroo Isles, and Timor Laut. "Viewed as a whole, this extensive region is characterised by a very spare population, by a paucity of rivers, by a great preponderance of sandy deserts, and by the singularity of its animal and vegetable products, which exhibit few species, and generally few individuals, but possess such a peculiar organisation that, in many instances, no parallel to it occurs in other regions of the globe." The aborigines consist of two races—viz., Alfourous, Papuans, or native Australians, in the continent of Australia, New Guinea, New Britain, New Ireland, the Louisiade Archipelago, New Caledonia, and the Feejee group, forming, in the opinion of many, a distinct variety of the human race, whose numerous dialects have little affinity with any other language; and the Maoris, in New Zealand, a Malayo-Polynesian race.

AUSTRALIA.

Geographical Position.—Australia, the smallest of the six continents, or the largest island on the globe, has Papua and Malaysia on the N. (but separated from them by Torres Strait and the Timor Sea); the Indian Ocean and Bass Strait (the latter separating it from Tasmania), on the W. and S.; and the Pacific Ocean on the E. Lat. 10° 41′—39° 8′ S.; lon. 113°—153° 47′ E.

In form, it is of an irregular onion shape, having its greatest extension from E. to W., in which direction it measures about 2500 miles, while its extreme breadth from N. to S. does not exceed 1980 miles. Cape York, in Torres Strait, is the most northern extremity; Steep Point, its most western; Cape Wilson, in Bass Strait, its most southern; and Cape Byron, in New South Wales, its most eastern. Sydney, the capital of New South Wales (lat., 33° 51′ S.), is nearly on the same parallel as Cape Town, Santiago de Chilé, Buenos Ayres, and Adelaide, the capital of South Australia; and on the same meridian as Jeddo, in Japan, and Wellesley island, in the Gulf of Carpentaria.

Area and Population.—The area is estimated at 3,000,000 square miles, or five-sixths of the area of Europe; and the population (including the aborigines, who are supposed to number only 10,000) to nearly one million.

COLONIES.	Area in Eng. Sq. Miles.	European Population.	Date of Census.	Year when Established.
New South Wales, .	500,000	342,060	1859	1788
Victoria, ...	86,831	504,519	1859	1837
South Australia, . .	300,000	118,215	1859	1834
Western Australia, .	80,000	14,837	1860	1829
Queensland, . . .		10,000	1859	1859
Total, . . .	966,831	989,633		

Political Divisions.—The whole Australian continent is a possession of Great Britain, which has established several important and, of late, highly prosperous colonies on its eastern and southern coasts. These, with their respective areas, population, and dates of establishment, are exhibited in the preceding table.

North Australia, with its solitary settlement of Port Essington, colonised in 1838, was abandoned eleven years afterwards. The chief towns of the other colonies are as follows:—

NEW SOUTH WALES.—Sydney 100, Paramatta 5 (Port Jackson), Liverpool 5, n. (Botany Bay), Windsor 2, Goulburn, n. (Hawkesbury), Newcastle, Maitland 5 (Hunter), Port Macquarie (Hastings), Bathurst 4 (Macquarie).

VICTORIA.—Melbourne 92, n., Williamstown 4, Geelong 23, Brighton (Port Philip), Alberton, Portland 3 (S. coast), Mitchellstown, n. (Murray), Sandhurst 9, n., Castlemaine (Loddon), Ballarat (Nurriwillan).

SOUTH AUSTRALIA.—Adelaide 16, n., Port Adelaide 10, Gawler, Brighton (Gulf of St Vincent), Wellington, Port Elliot, Goolwa (Murray), Port Lincoln (Spencer Gulf), Kapunda (Light), Kooringa (Burra-burra mines).

WESTERN AUSTRALIA. — Perth 2, Freemantle, Guildford, Toodyay, York (Swan River), Albany (King George Sound), Australind, Augusta (S.E. coast).

QUEENSLAND OR MORETON BAY.—Brisbane 2 (Brisbane, *affl.* Moreton Bay).

Notes on Towns.—*Sydney*, capital of the colony of New South Wales, on the southern shore of the magnificent harbour of Port Jackson, is a large, elegant, commercial city, containing numerous public buildings, amongst which are the Governor's residence, Parliament House, and the University, which, in granting degrees, enjoys the same status as the home universities. Sydney was founded in 1788 as a penal settlement, the inlet of Port Jackson being better adapted for that purpose than Botany Bay, to which the convicts had been transported. At the urgent request of the Australian colonists, the penal settlement has been abolished. The commerce and importance of the city have greatly increased since the discovery of gold at Bathurst in 1851. The principal exports of Sydney consist of gold, wool, hides, tallow, and the produce of the southern whale-fishery. *Paramatta*, at the head of Port Jackson, contains the summer residence of the Governor of New South Wales, and gives its name to a soft woollen fabric here manufactured, and has in the vicinity large salt and copper-smelting works. *Newcastle*, so named from its valuable coal mines, the produce of which is largely exported. *Maitland*, consisting of East and West Maitland, is a thriving town on both sides of the river Hunter, and surrounded by an extensive agricultural country. *Bathurst*, the principal town in the recently-discovered gold region; the road to it from Sydney crosses the Blue Mountains, through the Victoria Pass. *Melbourne*, capital of Victoria, on the Yarra Yarra, eight miles from its mouth in Port Philip, is the great emporium for all foreign goods intended for the colony. Since the discovery of the gold diggings its commerce has been enormously developed. It has a great extent of wharf accommodation, and ship-building docks are in contemplation; contains an endowed University, the Governor's residence, and Parliament House; and enjoys railway, steam, and telegraphic communication with several other towns in the colony. The exports in 1858 were valued at £14,017,000, about £11,000,000 of which represented gold. Such is the extraordinary mortality among children, that during the summer months the natural increase of the population is wholly arrested—the number of births scarcely exceeding that of the deaths. *Williamston*, the port of Melbourne, at the mouth of the Yarra Yarra, is an active bustling place. *Geelong* is the most important town in Victoria, next to Melbourne, which it surpasses in the convenience of its situation and the salubrity of its climate. It is the chief port for the wool of the colony; but since the discovery of gold in its vicinity, and the consequent development of Melbourne, its commerce has greatly declined. *Sandhurst*, a mining town in the Bendigo district, and a place of great trade and wealth, has a railway in construction to the capital. *Castlemaine*, the principal place in the Mount Alexander district, the richest of the gold-fields. *Ballarat*, fifty-five miles N.W. of Geelong, is rendered conspicuous by the richness of its gold-field. *Adelaide*, capital of South Australia, on the Torrens, seven miles from its mouth, is a neat town, regularly laid out, with wide streets intersecting at right angles, and is in every respect a thriving and important seat of trade. It has numerous manufactures, and an extensive foreign commerce. *Port Adelaide*, the port of the capital, which it approaches in population, is the principal seaport town in the colony. *Gawlertown*, a rising town on the route from Adelaide to the Burra-burra mines. *Kapunda*, with celebrated copper mines, which are next in importance to those of Burra-burra. *Kooringa*, in the immediate vicinity of the celebrated Burra-burra mines, the most productive in the world. The quantity of ore raised in 1857 was 10,961 tons, and the shares in the mining company, which cost originally £5, are worth now £150. *Perth*, the capital of Western Australia, is merely a large, straggling, but finely-situated place on the Swan river, nine miles from its mouth. *Freemantle*, the port of Perth, is now a convict settlement. *Guildford* and *York* are small settlements in the interior. *Brisbane*, capital of Queensland, a colony established in 1859, is a small town in an important agricultural district.

Surface and Mountains.—The surface of Australia has been but very imperfectly explored. Only the eastern part, sections of the west and south, an inconsiderable tract in the north-east and north, and very recently a considerable portion of the interior, have been as yet investigated.

The problem as to the possibility of crossing Australia from S. to N. has at length been virtually solved, and no question now remains that land-transit can be opened up, both for commerce and telgraphic communication, from the one coast to the other, through the centre of the continent. This important discovery we owe to Mr Stuart, who had previously made several successful attempts at investigating the interior. In March 1860, he started from Adelaide for the N., with two companions, and through the most heroic exertions explored the interior to within 300 miles of Victoria River in N. W. Australia, being a total distance of 1600 miles. The most northern point he attained is 100 miles farther N. than the point to which Gregory's expedition descended southward in 1856. Instead of an arid desert, as was long supposed, Mr Stuart describes the interior as a practicable country throughout, except for about 60 miles of his route, where no water is to be found. In many parts he found fine grass meadows, besides splendid gum and other trees, including at least four kinds of palm. A very large salt lake was also found in the interior, supposed, from the blueness of its waters, to be of great depth. The mountain-ranges of Australia are all of moderate elevation, are situated at no great distance from the coast, have all a meridional direction, and consist of primary and palæozoic rocks. The eastern coast chain, extending from Cape Melville southward to Bass Strait, is nowhere less than 2000 feet in elevation ; in several places it rises to 4000 feet ; and in the Australian Alps, to nearly 7000 feet. Mount Lindesay, near the source of Clarence River, has an altitude of 5700 feet ; farther south the Liverpool Range has an average height of from 2000 to 4000 feet. The Blue Mountains, in New South Wales, are of very moderate elevation ; but Mount York, their highest summit, is 3292 feet above the sea ; while the Australian Alps, or Warragong Mountains, attain in Mount Kosciusko a height of 6500 feet, being, so far as presently known, the culminating point of the Continent. The latter are in their highest part almost constantly covered with snow. Following the coast of Victoria westward, the first range we meet with is named the Pyrenees, and to the west of them the Grampians, attaining, in Mount William, the height of 4500 feet. Entering South Australia, we come to Mount Bryant, east of St Vincent Gulf, 3012 feet ; Flinders Range, running in a northerly direction from the head of Spencer Gulf, contains some summits ascending 3000 feet ; further west is the Gawler range, which has a maximum elevation of 2000 feet. Still further west, and onward to Western Australia, there is an unbroken range of cliffs varying from 200 to 500 feet in height. Mr Eyre, who explored this region, declares that there is not, along the whole of this extensive coast, a single valley to afford a channel to a river-course between the palæozoic rocks of South Australia and the similar formations of Western Australia. In Western Australia, three parallel ranges traverse the coast from south to north, Talbanop, the culminating point, in the Darling range, being 5000 feet above the sea. Farther north, in lat. 28°, is the Victoria range, of inconsiderable elevation, Mount Narryer having an altitude of 1688 feet; while in lat. 24° 20′, Mount Augustus, near Murchison River, rises to a height of 3480 feet. Previous to the travels of Mr J. A. Wilson in North-west Australia, in 1857, it was generally believed that a lofty range of mountains ran parallel to the coast from N.W. Cape to Coburg Peninsula; but that explorer has determined that the dividing ridge or water-parting between the sea and the interior nowhere exceeds 1600 feet in height; while, instead of a chain of mountains, he found a continuous table-land at an average distance from the ocean of 300 miles.

Capes and Peninsulas.—Cape York in the extreme N.E. of Australia, the most northern point of the Continent; Point Dale and Coburg Peninsula, in North Australia; Capes Londonderry and Leveque, on the N.W. coast; Steep Point, the western extremity of the Continent; Cape Leeuwin, the S.W. extremity; Capes Spencer and York, in South Australia; York Peninsula, between Spencer Gulf and Gulf of St Vincent; Capes Otway and Wilson, S. of Victoria; Cape Howe, the S.E. extremity of the Continent; Cape Byron, the eastern extremity; Sandy Cape, Cape Flattery, and Cape Melville, on the N.E. coast.

Gulfs and Straits.—Australia is but little indented by arms of the ocean, and presents no wide estuaries; while the coasts are generally deficient in good harbours, though Port Jackson in New South Wales, and Port Denison in Queensland, discovered in 1859, are among the best in the world. Torres Strait, between Australia and Papua; Gulf of Carpentaria between Clarence Strait and Cambridge Gulf; Admiralty Gulf, King's Sound, and Exmouth Gulf on the N.W. coast; Shark Bay and Geographe Bay on the W. coast; Great Australian Bight, Spencer Gulf, St Vincent Gulf, Encounter Bay, and Port Philip, all on the southern coast; Bass Strait, between Victoria and Tasmania; Corner Inlet, Botany Bay, Port Jackson, Port Stephen, and Moreton Bay, all on the east coast; Hervey Bay, Broad Sound, Halifax Bay, and Princess Charlotte Bay, all on the N.E. coast.

Islands.—Cook's Island, in Torres Strait; Wellesley Island and Groote Eyland, in Gulf of Carpentaria; Melville Island and Bathurst Island, west of Coburg Peninsula; Dampier Archipelago, east of Exmouth Gulf; Dirk Hartog, in Shark Bay; Kangaroo Island, south of South Australia; King's Island and Furneaux Islands, in Bass Strait; Moreton Island and Great Sandy Island, on the coast of Queensland.

Among the greatest natural wonders in the world is the Great Barrier Reef of N.E. Australia, stretching in a direction parallel to the coast, from Sandy Cape, in Queensland, and across Torres Strait, close up to the shores of New Guinea, being a distance of not less than 1200 miles. It consists of a great submarine wall of coral formation, rising from an unknown depth in the ocean just up to the level of low water. On the surface it is not absolutely continuous, being broken through by a number of tolerably deep passages. It varies in breadth from 10 to 90 miles, and its distance from the coast is from 20 to 70 miles, thus affording a navigable channel between it and the continent perfectly safe in all weathers. The swell of the Pacific falls upon the outer edge of the reef with a sound heard far and wide, producing a long curling line of dazzling white foam, without a break in its continuity for many leagues. But the most remarkable fact connected with the formation of this mighty breakwater is, that the coral insect cannot live at a greater depth than about 15 fathoms. The explanation of this curious phenomenon seems to be, that at the commencement of its formation, the bottom of the sea, now known to be upwards of 2000 feet under water, could not have been more than 15 fathoms beneath the surface, and that since then the land has been slowly subsiding.

Rivers and Lakes.—Australia is more deficient in its inland waters than any of the other continents, while, with one important exception, the rivers that exist are not navigable to any considerable distance into the interior.

The only great river hitherto explored is the Murray, which, with its main affluents, the Darling and the Murrumbidjee, has its sources in the western declivity of the range of mountains that runs along the eastern coast. The main stream is now rendered navigable for 1800 miles, but with its two principal affluents it may be said to have been laid open for 2500 miles; and all this by the clearing away of the stems and stumps of trees, the result of ages of decay. Following its principal sinuosities, the Murray is nearly 2000 miles in length, while the area of its basin is upwards of 200,000 square miles. It has a general south-westerly course, and enters the Indian ocean at Encounter Bay, in the south-eastern angle of South Australia. The principal rivers on the opposite or eastern side of these mountains are the Hawkesbury, Hunter, Hastings, Clarence, Richmond, Brisbane, and Burnett, all of which flow easterly to the Pacific Ocean. The rivers flowing northward to the Gulf of Carpentaria and the Timor Sea, are the Liverpool, Alligator, Adelaide, Victoria, Albert or Prince Regent, Glenelg, and Fitzroy; while the principal of those entering the ocean on the west coast, are the Gascoyne, the Canning, the Lyons, the Murchison (with its affluents the Roderick and Impey), and the Swan River in West Australia. In all the rivers of Australia, the quantity of water is subject to great and sudden variation; and streams which at one time are deep and rapid torrents, are, at another season, almost dried up or become converted into a mere chain of ponds.

With the exception of the large salt lake discovered by Stuart in 1860 (p. 675), few real lakes are as yet known in this continent. Generally speaking, they consist of extensive sheets of water, formed during the rains, but afterwards dried up or converted into marshes. The principal lakes are situated in the colony of South Australia. *Victoria* or *Alexandrina* lake, an expansion of the river Murray, close to its mouth, is an extensive sheet of water, 273 square miles in area. The water is fresh at the entrance of the river, but becomes brackish towards the sea. Its depth varies from six to nine feet, and the channel by which its waters communicate with the sea is very narrow and dangerous It is connected south-eastward with lake *Albert*, by a strait five miles in length. Lake *Torrens*, an immense salt marsh north of Spencer Gulf, from 15 to 20 miles across and 300 feet above the sea, is of a horse-shoe form, bending around an arid peninsula, which is traversed from N. to S. by the Flinder range. It is now found not to be continuous throughout, and its northern portion (separated from the main body by half a mile of level sandy ground) has been named Lake *Gregory*, in honour of its discoverer. A little to the west of Lake Torrens are *Island Lake* and *Lake Gairdner*—the last of which is of great dimensions.

Climate.—As the northern third of Australia is situated in the torrid zone, the climate of the N., N.E., and N.W. coasts is necessarily very hot; but it is remarkable for the absence of that humidity which is usually so prominent a feature of intertropical climates.

The whole of this immense region is within the range of the N.W. monsoon, which brings heavy rain. During its continuance (from November to March) is the only period of the year in which rain falls at Port Essington, in North Australia. From March to July there is a constant succession of beautiful weather—the noonday heat seldom exceeding 95° Fah. being tempered by delicious S.E. breezes. At Victoria river, in North Australia, the maximum heat in November at mid-day is 106°; of February, 99°; of May, 96°; the minimum heat in July is 49°; and the number of rainy days in the year, 84. There seem to be three seasons in North-West Australia—viz., the Wet Season, commencing about December and lasting to February: the Spring or Cool Season, from March to July, which is the healthiest time of the year; and the Dry or Hot Season, from August to November. In general, the climate of this portion of the continent is much more regular than that of the settled districts in the extra-tropical regions, which can hardly be said to have any fixed seasons, and where years of complete drought sometimes occur, followed by years of flood. In general, the climate of the Australian colonies may be considered as very dry—the amount of moisture not exceeding that of Cape Colony and the southern parts of South America, which places they also resemble in their mean annual temperature. The Sydney summer is described as very delightful, and resembling that of Avignon or Constantinople; while its winter is compared with that of Cairo and Cape Town. It is remarked that along the S.E. coast there is a constant variation in the climate of each season through a cycle of 12 years; for six years there is a constant increase of drought, the sixth being entirely rainless; for the next six years there is a regular increase of humidity, the last being a year of floods and almost incessant rain. On the south coast the climate is agreeable and salubrious, resembling, for nine months in the year, the spring and summer of Scotland: while, in the lower districts, the other three are warm but not oppressive, and even in the hottest weather the evenings are almost invariably cool. For the mean annual summer and winter temperatures of Sydney, Melbourne, and Perth, see p. 37.

Geology and Minerals.—The geological structure of this continent is characterised by great uniformity, the mountain ranges of the coast consisting of primary and palæozoic rocks; while the whole of the interior, so far as yet known, is of tertiary formation.

The finest practical result on record of a thorough knowledge of geology, deserves to be stated in connection with these mountain ranges. The close resemblance of their structure to that of the Ural Mountains led Sir Roderick I. Murchison, in 1845, to predict that they would be found to be auriferous; and, six years afterwards, Mr Hargraves discovered extensive deposits of the precious metal at Bathurst and Wellington, in New South Wales; while since that time the most valuable and extensive gold-fields in the world have been found in various and widespread localities, especially in the province of Victoria. In 1857 no less than 2,757,047 oz. of gold were exported from Victoria alone, and 148,126 oz. from New South Wales. Very little gold has as yet been found in South or West Australia; but the former contains inexhaustible deposits of copper of the finest quality. In 1857 there were 48 copper mines in operation, besides 3 of copper and lead, 6 of lead, and 1 of silver and lead; while the total quantity of copper exported was valued at £438,035. Coal is abundant in New South Wales (especially on the river Hunter), together with iron ore, which will probably, ere long, be turned to good account; coal is also found on the Swan River, in West Australia, a region which also abounds in mercury, zinc, lead, copper, iron, and other ores. Coal is scarce, but iron plentiful, in South Australia. Other minerals are tin, potters' clay, granite, sandstone, limestone, slates, fine marble, and numerous varieties of fine pebbles—as jasper, agates, opal, and chalcedony. On the whole, the mineral productions of Australia equal, if they do not surpass, in value those of any other continent.

Botany and Agriculture.—The native flora of Australia and Tasmania comprises Prof. Schouw's 24th phyto-geographic region, named by him the *Region of Eucalypti and Epacridaceæ*, from the prevalence of these orders, and "Brown's Region," in honour of the late Robert Brown, justly styled by Humboldt, "*Facile princeps Botanicorum.*"

This region forms one of the most peculiar floras on the earth's surface, though it does not display any great profusion of vegetation. The native trees are all evergreens, and the forests consist principally of *eucalypti* (or gum trees), of which there are upwards of 100 species, acacias, and plants of the order *Epacridaceæ*, consisting of shrubs or small trees which are allied to the heath tribe. The *araucaria*, also, or Norfolk Island pine, forms one of the features of this region. Of 5710 plants hitherto discovered in this continent, no fewer than 5440 are peculiar to it. Robert Brown alone, in 1805, carried to this country 4000 species, nearly all of which were new to science. Palm trees are limited to the north and north-east coasts, where the vegetation considerably resembles that of the adjacent Malaysia. Australia produces no native fruits capable of being used as food, excepting a few berries and a kind of chestnut lately discovered; but along the Murchison river, in Western Australia, are found wild tobacco, and an esculent tuber resembling the potato. All the principal food-plants, however, have been introduced, and are cultivated with great success in the different settlements; while the vine, fig, orange, peach, and numerous other fruits, flourish in the greatest luxuriance wherever they have been tried; and in some places the sugar-cane, indigo, and cotton plant are successfully cultivated. In 1857, there [illegible]

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eight merino sheep were introduced by a settler named M'Arthur, and in 1858 these had increased to 16,000,000, one half of which were in New South Wales, besides 2,143,000 head of cattle, and 175,000 horses.

Zoology.—This continent, with the adjacent groups of islands which, with it, constitute Melanesia, forms one of the two provinces into which naturalists have divided the oceanic zoological kingdom. The fauna of this kingdom is the most peculiar and remarkable in the world—nearly all its 150 species of mammals being peculiar to it. The quadrumana, pachydermata, and ruminantia, are wholly wanting. The marsupialia, comprising 105 species, and the edentata, 3 species, are all peculiar to it; while of the 21 rodents, no fewer than 19 species are unknown in any other part of the world. (See p. 59.)

Australia alone, with Tasmania, contains 58 species of quadrupeds, of which no fewer than 46 species, including the kangaroo, wombat, brush-tailed phascogale, ursine opossum, thylacinus, bandicoot, chaeropus, kangaroo rat, sooty tapoa, koala, echidna or porcupine ant-eater, phalanger or ring-tailed opossum, petaurist or flying opossum, ornithorhynchus or water-mole, and other marsupial animals, are all peculiar to this continent and the islands in its immediate vicinity. Of these animals, the largest and most characteristic are the kangaroos, of which there are several species; while the most anomalous, as its name indicates, is the *Ornithorhynchus paradoxus*, which has the bill and feet of a duck, the body and fur of a mole, and the internal structure of a reptile, which lays eggs like a bird, and suckles its young like a mammal. The kangaroos are vegetable-feeding animals, browsing upon herbage like the ruminants, which some of them also resemble in chewing the cud. Some are of great size, being nearly as tall as a man when in their usual erect position; but others are as small as the common hare, an animal which, in general appearance, they greatly resemble. It would appear that the pouched animals formed in all ages the characteristic feature of the Australian fauna—their fossil remains being found here in greater abundance than in any other country; just as fossil edentata are chiefly found in America, a continent to which the existing species of the order are for the most part confined. None of the larger beasts of prey are found in Australia; the most formidable is the dingo or native dog, which resembles a wolf, and commits serious ravages upon the property of the settlers. When discovered by Europeans, Australia contained no quadrupeds useful to man; but all our domestic animals have now been introduced, especially the sheep, cow, and horse, and they are found to thrive admirably. Among native birds, the most numerous are those of the parrot tribe and honey-suckers; eagles, falcons, hawks, and owls, are also common; while in the southern portions of the continent is found the emu or cassowary, a bird resembling the ostrich, though inferior to it in size. The songsters and gallinaceous birds are almost entirely wanting; and thus, not only the quadrupeds, but also the birds most useful to man, together with the cereals and other food-plants, were unknown to the aborigines of Australia.

Ethnography.—The population of Australia consists, for the most part, of British settlers and their descendants, who number nearly a million; and of a race of oceanic negroes, who, in some of their peculiarities, approach the true African type, and in others as widely recede from it.

The aborigines possess lank instead of woolly hair, are weak and puny in body, and much inferior, both in moral and intellectual qualities, to the African negro. Their skin is of a dark sooty colour, their stature short, the forehead low and full, the nose broad, the lips thick, the frame slight and better adapted for feats of agility than of strength. The male sex wander about in a state of almost perfect nudity, practising cannibalism; while the females are seen protected by a partial covering of kangaroo skins. Of arts and manufactures they have scarcely any idea: their cutting instruments are of stone, and their arms of offence consist of spears, bomerangs (a curved wooden projectile which they throw with great dexterity), clubs, and tomahawks. Of agriculture, even in its rudest form, they have not the slightest knowledge. They possess no flocks or herds, nor do they seem to have any knowledge of barter, or even of property, holding everything in common. They have no houses, but live in holes in the earth, or under the shelter of bark screens. In short, they take rank with the Bosjesmans of

Southern Africa and the Fuegians of South America, constituting one of the lowest and most degraded races of mankind, the most abject in the means of bodily comfort, the most deficient in knowledge, and the most destitute of history, tradition, religion, and monuments of past time. Their number is rapidly decreasing in the presence of the white man, and probably in a few years the whole race will have disappeared. In 1837, the number of natives in Victoria alone amounted to upwards of 20,000, while in 1857 they had decreased to 1768. Considering the character of the country, the great deficiency of water, the absence of fruit-trees, of esculent roots, and of all the cereals, as also of domestic animals (whether for food or labour), this continent cannot have been very densely peopled at any former period. Although the several tribes have each a distinct language, which differs greatly from the others in its roots or vocables, they are all subject to the same laws of construction, and may, therefore, be regarded as members of one family. Though possessing little or no resemblance to the dialects prevailing in the islands lying to the east and north-east, this family is said to bear some striking analogies to the Tamil and other languages of the Deccan. The Rev. Mr Thralkeld has produced a grammar of the Macquarie dialect, and translated into that tongue the Gospel of St Luke; but little has yet been done to rescue the aboriginal dialects from oblivion, or to instruct the people in the Christian religion.

The first point of Australia seen by Europeans was a portion of the north coast, discovered in 1606 by the Dutch, who gave the country the name of New Holland. Cape York, its N.E. extremity, was seen by the Spanish commander, Luis Vaes de Torres, a few months afterwards; though little was known of the country until after Dampier, Wallis, and afterwards Cook, explored its various coasts. The favourable report of it by the latter was followed by the British settlement of Sydney, now cap. of New South Wales, on Port Jackson, in 1788. Port Philip, and the whole extent of coast lying westward of it was not discovered till 1802; while the district of that name, which was formerly a dependency of New South Wales, and now called Victoria, was not colonised till 1835. The colony of Western Australia, or Swan River, was established in 1829, and, after the cessation of transportation to Tasmania, was made a penal settlement, at the request of the colonists. It is the only place on the continent to which convicts are now sent. South Australia, established in 1834, was colonised in 1836; while Moreton Bay, or Queensland, formerly a portion of New South Wales, was constituted a distinct colony in 1859. The famous gold discoveries were made in 1851; in 1855 the colonies were placed on the footing of self-government; and since that time they have entered with increased ardour upon the path of progress. In each of the colonies the governor is of imperial nomination, and is assisted by a colonial parliament, which consists of a council and assembly—the former elected by a property qualification, both as regards voter and member, and the latter without either. The colonists are divided into several religious denominations. There is no church established by law, but the clergy of all sects, willing to accept government aid, receive grants from the public revenues. In 1849 the population was only 287,409; during the ten years following it had increased nearly fourfold; while during the same period the population of the United States has only increased by one-fourth. The rate of increase is most remarkable in the colony of Victoria, which, in the seven years ending 1857, has sextupled its population. Twenty-five years ago Australia scarcely appeared in the commerce of Britain, and three of its colonies had no existence; they now collectively contain nearly a million colonists; while their aggregate exports in 1857 amounted to £21,109,084, and their imports to £25,758,622. Including Tasmania and New Zealand, the united imports amounted the same year to £27,500,000; the exports to £22,250,000; the net annual public revenue to upwards of £5,000,000; and the public debt to £5,770,000. The chief articles of Australian produce are gold, copper, and wool. Of gold, which is chiefly found in Victoria, the annual produce is nearly £12,000,000; of copper, all from South Australia, £500,000; and of wool, contributed in various proportions by all the colonies, but chiefly by New South Wales and Victoria, about 54,000,000 lb. weight, worth about £4,000,000 sterling. Nearly the whole of these valuable productions is now annually conveyed, in a fleet of magnificent merchant ships, direct to British ports. Improved navigation has reduced the passage by sailing ships from England to about ninety days, and by steam to sixty days; while by the overland route the postal delivery may be expected in little more than six weeks. The route from Southampton to Sydney by the

Isthmus of Suez is 13,238 miles, but by the Isthmus of Panamá it is only 12,700 miles. Extensive railway lines have been projected, and are already partially constructed; while telegraphic communication is completed between the colonies of New South Wales, Victoria, South Australia, and latterly with Tasmania, by submarine cable across Bass Strait.

TASMANIA.

Tasmania, formerly Van Diemen's Land, a colonial possession of Great Britain, lies S.E. of Australia, from which it is separated by Bass Strait, 120 miles wide. Lat. 40° 40′—43° 35′ S.; lon. 144° 40′—148° 25′ E.

In form, this island is heart-shaped; its greatest length, which is nearly the same as the breadth, is 200 miles. The area is estimated at 22,626 square miles, or about one-fourth of that of Great Britain; while the population, in 1859, was 84,080, being 4 persons to each square mile. Including Flinders and Cape Barren Islands, it is now divided into 19 counties by new survey map.

Chief Towns.—Hobart Town 22, Brighton n., New Norfolk, Hamilton n. (Derwent), Georgetown, Launceston 10, Longford, Campbeltown, Yorktown, Oatlands n. (Tamar), Richmond (Coal River).

Hobart Town, the capital, is a well-built town, on the Derwent, about 20 miles from its mouth in Storm Bay. The estuary of the river is navigable for the largest vessels up to the town, which possesses a fine wharf, breweries, distilleries, tanneries, timber and flour mills, a college, and an extensive foreign commerce.

Launceston, at the head of the estuary of the Tamar, on the northern side of the island, and 32 miles S.E. of Port Dalrymple, is the second town in importance in the colony, and carries on a considerable traffic with Victoria and South Australia.

Georgetown, at the mouth of the Tamar, is also a thriving place. The other towns mentioned are situated in the interior, and are, for the most part, small but flourishing places.

Surface and Climate.—The surface is mountainous and highly diversified, consisting of mountain-ranges, lofty table-lands, isolated peaks, and fertile valleys and plains, generally clothed with forests.

The mountains of Tasmania, instead of being arranged into distinct chains, as in most other countries, are, by the recent surveys, ascertained to be dispersed in irregular groups and isolated peaks over the greater portion of the surface. Having the same direction and geological structure as the Australian Alps, on the opposite side of Bass Strait, they must be viewed as forming a continuation of the eastern cordillera of the continent. Their average elevation is about 3500 feet. The loftiest summits in the western half of the island are—Cradle Mountain, 5069 feet; Valentine's Peak, 3637 feet; and Dry's Bluff, 4257 feet: while on the eastern side are—Ben-Lomond, 5010 feet; Mount Barrow, 4544 feet; and Mount Wellington, near Hobart Town, 4166 feet. These are covered with snow for about eight months in the year. The principal rivers of the country are the Derwent, flowing southward into Storm Bay, and the Tamar, northward into Bass Strait. The climate is delightful and highly salubrious, resembling that of the S. and S.W. of England. Owing to its higher latitude and insular position, it is cooler and more humid than in the adjacent continent. The mean annual temperature of the capital is 52°.37, mean summer 63°.06, and mean winter, 42°.14 Fah. The average fall of rain over the island is 21 inches; but at Tasman Peninsula, in the S.E., it is 44 inches. The soil is in most places highly fertile; but being usually covered with dense forests, only a limited portion of the country is yet under cultivation.

Natural Productions.—The mineral treasures of Tasmania remain for the most part undeveloped.

Iron ore of very pure quality, and some of it highly magnetic, is of general occurrence. Copper is found in the hills along the north coast, with traces of lead, zinc, and manganese. Coal of good quality is worked on the east coast, and is known to exist very generally throughout the island; and salt is obtained in the interior. The vegetation, which strongly resembles that of South-Western Australia, is characterised by its eucalypti, acacias, mimosas, pines, and myrtles. The trees are all evergreen, and the timber is highly valuable, not only for house and ship-building, but also for cabinet-work; while many of the trees yield gums and resins. The *fauna* also is almost identical with that of Australia, consisting of kangaroos, wombats, opossums, bandicoots, and ornithorhynchi or duck-bills. The native tiger or hyena-opossum, and dasyurus or native devil, are peculiar to Tasmania, and perhaps also the wild-cat. The birds are numerous, embracing the emu, cockatoo, parrot, eagle, black swan, pelican, duck, &c. There are several varieties of snakes, two of which are venomous; and fish are said to be more numerous than on the coasts of Australia. Black whales abound in all the surrounding seas, spermaceti whales in Bass Strait, and a lucrative whale fishery is carried on along the southern coast.

Ethnography.—The aborigines, who belonged to the same race as the natives of the continent, are now all but exterminated.

Tasmania was established as a penal colony in 1803, and the convicts first sent thither were of the most abandoned description. No regular system of discipline was employed to keep them in check, but they were dispersed in small bodies over the island; while others, escaping from constraint, pursued a predatory life. The wives of the natives were seduced by them, and this led to bitter and protracted hostilities between the two races. In 1830 the local government interfered, and the free and convict inhabitants were enrolled for the purpose of killing or capturing the aborigines. At length the latter surrendered in despair, and were removed to Flinder's Island, in Bass Strait, in 1835. Here their numbers were so greatly reduced from various causes, that it was deemed an act of humanity to bring back the miserable remnant to their own country. In 1814 they were estimated at about 5000; on their return from Flinders Island, in 1845, they were reduced to 54; while in 1858 they did not exceed 16 individuals. In 1852 this colony ceased to be a penal settlement, except for the convicts already in the island, who now amount to only 3000. They are confined to Tasman Peninsula, Maria Island, and Macquarie Harbour, and cost the mother country £25,000 a-year in police and jails. Of late years the civilised population has been greatly increased by the influx of emigrants of a respectable class from the British Isles. The staple products are wool, grain, fruits, and timber. In 1857 there were 134,000 acres under cultivation, of which 63,000 were devoted to wheat. The sheep amounted, in the same year, to 1,879,000; cattle to 81,000; and horses to 19,850. The exports, consisting of wool, agricultural produce, and timber, were valued at £1,354,655; and the imports, chiefly manufactured goods from the mother country, to £1,271,087. The form of government is the same as that of New South Wales, from which this colony was dissociated in 1826; and the revenue, in 1858, amounted to £183,978. The island was discovered by Tasman, a Dutch navigator, in 1642, who named it Van Diemen's Land, after the Dutch governor of Batavia; but it is more properly called Tasmania, in honour of its discoverer.

NEW ZEALAND.

New Zealand, a colonial possession of Great Britain, consisting of a chain of three large and several smaller islands, is situated in the South Pacific Ocean, about 900 miles E. of Tasmania, 1200 miles S.E. of New South Wales, and 6000 miles W. of Patagonia. Lat. 34° 18′—47° 20′ S.; lon. 166° 30′—178° 30′ E.

Auckland, the capital in the northern island, is nearly on the same parallel as Buenos Ayres, Adelaide, and the Cape of Good Hope; and in the same meridian as the Marshall Archipelago and the Feejee Islands. The extreme length, extending in a curved line through the centre of the three largest islands, is more than 1100 miles; while the breadth varies from 150 to less than 15 miles. The area is estimated at 121,825 square miles, being nearly the same as that of the British Isles; while, by the census of December 1858, the population amounted to 117,224, of whom 56,000, or nearly one-half, were aborigines, and the remainder British settlers. New Zealand received its name from the Dutch navigator, Tasman, who discovered it in 1642. Captain Cook circumnavigated it in 1769, and took formal possession of it in the name of Great Britain. The first missionary station was established in the Bay of Islands in 1815; but it was not erected into a colony till 1840. The three large islands are now generally known as the North, Middle, and South Islands; or, as they are called in official documents, New Ulster, New Munster, and New Leinster or Stewart Island; but the native name for the northern island is *Te-ika-Maui*, and for the middle, *Te-wai-Pounamu*. The middle island is separated from the northern by Cook Strait, 15 miles wide, and from the southern by Foveaux Strait, which divides it from Rakiura or New Leinster, which has not yet been colonised. The principal headlands of the northern island are North Cape and East Cape; of the middle island, Cape Farewell, in the extreme N.W.; and of the southern island, South Cape, 600 miles N. of Cape Horn. Among the more important inlets are, Bay of Islands, Hauraki Gulf, Bay of Plenty, and Hawke Bay, in the east side of New Ulster; Port Nicholson on its southern coast; Blind Bay or Tasman Bay, Admiralty Bay, and Cloudy Bay, on the north coast of New Munster; and Port Cooper and Otago harbour on its east coast.

Political Divisions.—New Zealand is now divided into seven provinces—viz., Auckland, New Plymouth, Wellington, and Hawke, in North Island; and Nelson, Canterbury, and Otago, in Middle Island. The principal towns are the following:—

NEW ULSTER.—AUCKLAND 11 (G. of Hauraki), Wellington 5 (Port Nicholson), New Plymouth or Taranaki 3 (W. coast).

NEW MUNSTER.—Nelson 4 (Blind Bay), Christ Church 3, Lyttleton (Port Levy), Dunedin 2 (Otago harbour).

Auckland, the capital of New Zealand, on the estuary of the small river Thames, and on the E. side of a narrow isthmus, is a thriving town, admirably situated for trade. It was founded in 1840, and is rapidly increasing. *Wellington*, on the splendid harbour of Port Nicholson, on Cook Strait, was the first established of the New Zealand settlements, and is still, next to the capital, the wealthiest and most populous town in the colony. *New Plymouth*, in a recess of the western coast of North Island, and near the volcano of Mount Egmont, is picturesquely situated, but possesses no good harbour. *Nelson*, capital of province of same name, and the most populous town in Middle Island, is situated on Blind or Tasman Bay (an arm of Cook Strait); it was founded in 1841, and has abundance of good land in its immediate neighbourhood. *Christ Church*, capital of Canterbury province, and near Banks' Peninsula, was established in 1850, and is a very thriving settlement. *Lyttleton*, the shipping port of province Canterbury, stands on the shores of Port Levy. *Dunedin*, capital of the province of Otago, founded in 1848 by a body of Scotch emigrants in connection with the Free Church of Scotland, is rapidly rising into importance.

Surface and Climate.—A chain of snow-clad mountains traverses the two larger islands in the direction of their greatest length, throwing off, in New Ulster, several lateral ranges containing lofty volcanic peaks, amongst which are Mount Egmont (now extinct), 8270 feet, and Tongariro, 6200 feet.

The loftiest summits of North Island are Mount Tkaurangi, on the E. side of Bay of Plenty, 5535 feet, and Mount Edgecumbe, 2575 feet. Kai-Kora, in Middle Island, attains an elevation of 9700 feet; but the culminating point of the mountain system of New Zealand is Mount Cook, on the same parallel as Banks' Peninsula, 13,200 feet. The climate is universally spoken of in terms of no common eulogy, as remarkably salubrious and agreeable, milder and more equable than our own, the winters being warmer, while cool refreshing sea-breezes prevent oppressive heat in summer. Heavy rains and high gales are frequent, but there is no rainy season. The mean annual temperature of Auckland is 59°; mean winter, 51°; and mean summer, 67°. The coldest month (July) at Dunedin averages 38°, and the hottest (December) 62°. Snow seldom falls, except in the southern parts of Middle Island. Here the annual rainfall varies from 30 to 34½ inches; while in the northern island it ranges from 45 to 55 inches.

Natural Productions.—The islands are in general of trap and volcanic formation, but many of the rocks are crystalline, while the sedimentary formations are of shale and grey sandstone. These contain remarkable fossil birds, the most extraordinary of which is the gigantic Moa, which must have been from 10 to 15 feet high.

The mineral products are valuable and extensive. Coal is found in many places in both islands, and is already worked with advantage; gold, copper, and iron in the neighbourhood of Auckland, and several other places; while several other mineral products occur in particular localities, as manganese, tin, nickel, lead, bismuth, arsenic, marble, lime, alum, and sulphur. New deposits of the precious metal have recently been discovered, which have attracted a crowd of gold-diggers. The quantity exported, in 1859, amounted in value to £52,443. The flora of this country forms a botanical centre called Forster's Region (p. 56), which forms a connecting link between the floras of South America, Australia, and Cape Colony. Already 632 species are known to botanists, a very large proportion of which are plants peculiar to this region. The latter include *Phormium tenax* or New Zealand flax, from the fibres of which a cordage of singular tenacity and strength is formed. Ferns cover large areas of the country, often attaining enormous dimensions. One of the most common is the *Pteris esculenta*, the root of which is used as food by the natives. The Australian pine, tree-fern, and Kauri or *Dammara Australis*, a kind of pine, form extensive forests. European grains of all kinds, fruits, and vegetables, grow luxuriantly on the cleared surface, and admirable pasture for cattle is produced by sowing the English grasses. When first visited by Europeans, New Zealand was found to contain no indigenous land quadrupeds; but when the first colonists arrived in the country, they found hogs, dogs, and a few rats and mice, probably introduced by runaway convicts from Australia. The geology of the country presents a like absence of the remains of any mammaliferous animal; but a prodigious number of well-preserved fossil birds, of the struthious order, are found in the post-pliocene and pleistocene deposits. The *Dinornis* and *Palapteryx* were of gigantic size, varying in height from 4 to 11 feet. A wingless bird (*Apteryx*), the smallest living representative of the ostrich family, still abounds in these island, which, however, do not contain many species of the feathered tribe. There are no serpents or other venomous reptiles; but fish swarm on the coasts and in the rivers. Whales and seals, once very abundant, have been greatly reduced in number by the ruthless modes of capture long practised. The whale fishery is still carried on with success.

Ethnography.—The aborigines, who are known as Maories, belong to the Malayo Polynesian race, and differ very widely from the natives of the Australian continent.

They are a tall, well-built, active, and intelligent people, with curling glossy black hair, and copper complexion; they are hospitable, frank, and generous; but their passions are easily raised, and they are then cruel and ferocious. Cannibalism, once very prevalent among them, is now almost eradicated. Many of them have been converted to Christianity, and in some districts they have considerable tracts of land under cultivation. They are very courageous in war, and have at different times been very troublesome to the colonists. The race is rapidly on the decline, and their present war (1860) with the British troops will no doubt still further reduce their number. The Maori language is a dialect of the Malayan, and closely resembles the Tahitian and Hawaian spoken in the Society and Sandwich Islands. The colonists, who, in 1858, amounted to 61,224, are annually receiving large accessions to their number. The emigrants are mostly persons of the middle and even higher ranks of life, who, attracted by the climate and fertility of the country, have gone out in companies to lay the foundation of a prosperous nation at the antipodes. A free constitution, consisting of a House of Representatives and a Legislative Council—the former elected by the people, the latter appointed by the Crown—came into force in 1853. In regard to religious statistics, the Church of England has 30,000 adherents; Scottish Presbyterianism, 11,000; the Church of Rome, 6000; and Wesleyan Methodists, 5000. The land under crop in 1858 was 140,000 acres; land enclosed, 235,000 acres; wool, which is more largely exported than any other commodity, £254,000; grain was exported to the value of £23,000; potatoes, £33,000; timber, £17,000. The total exports amounted to £458,000, and the imports to upwards of £1,000,000. These statistics are highly satisfactory, and leave no doubt of the general prosperity of this most interesting colony.

Auckland Isles.—These consist of a volcanic group of one large and several small islands, about 180 miles S. of New Zealand. The largest island is about 30 miles long and 15 broad, has two good harbours, and is covered with rich vegetation. They were discovered in 1806 by Captain Bristow, one of the agents of Mr Enderby, to whom the English government have granted them as a central whaling station. When discovered they were uninhabited, and contained no land animals.

Antipodes Island, about 630 miles S.E. of New Zealand (lat. 49° 32′ S., lon. 178° 42′ E.) is the land in the southern hemisphere most nearly opposite Greenwich.

Chatham Isles, 386 miles E. of New Zealand, form a small cluster of islands, the two largest of which are named Chatham (90 miles in circumference), and Pitt Island. They were discovered by Lieutenant Broughton in 1791, and were inhabited by a harmless race of 1200 savages, who in 1830 were reduced to slavery by a band of New Zealanders, and are now nearly extinct. The products are similar to those of New Zealand.

Norfolk Island, 400 miles N.W. of New Zealand and 1200 E.N.E. of Sydney, is a small but beautiful island belonging to Great Britain. It has an area of 14 square miles, is well-watered and fertile, but has neither harbour nor roadstead. It is the seat of a convict establishment to which the worst class of criminals are banished. Its *araucaria* are famed for their size and wood.

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dency, the Isle of Pines; length [illegible] miles, area [illegible] sq. miles, population [illegible]. The aborigines are a robust race of Papuan negroes, who speak a language distinct from that of the neighbouring islands. The surface is mountainous, rising in the centre to nearly 8000 feet, in the north wooded, but elsewhere arid and bare. The productions greatly resemble those of New South Wales.

New Hebrides, a group of about twenty large and a much greater number of smaller islands, N.E. of New Caledonia, from which Espiritu Santo, the largest of them, is about 275 miles distant. The area is estimated at 200 square miles, and the population, who are of the Papuan race, at about 200,000. The group is of volcanic origin, and in Tanna is a volcano of great activity. Most of the islands rise into lofty hills; they are all well wooded, abound with water, and present a most luxuriant vegetation. The chief productions are figs, nutmegs, oranges, cocoa-nuts, bananas, bread-fruit, and the sugar-cane. Erromanga, north of Tanna, has acquired a melancholy celebrity as the scene of the murder of the devoted missionary Williams in 1839.

Queen Charlotte Islands, a group of volcanic islands, between the New Hebrides and the Salomon Islands, comprising Santa Cruz, Nitendi, and Manicolo. They are populous and well-wooded, the natural productions being similar to those of the New Hebrides. Manicolo was the scene of La Perouse's disastrous shipwreck in 1789.

Salomon Isles.—This archipelago, lying E. of New Guinea, from which it is about 275 miles distant, consists of eight principal, with numerous minor islands, and extends from N.W. to S.E. for nearly 600 miles. They have not been carefully surveyed, but they are said to be mountainous, fertile, well-wooded, and of volcanic origin. The population consists partly of Malays and partly of Papuan negroes. The largest islands are Bougainville, Choiseuil, Isabel, Malayta, Guadalcanar, and San Christoval.

Louisiade Archipelago, a group of about eighty islands, situated about 60 miles E.S.E. of New Guinea; they are covered with dense forests, and are but thinly inhabited by negroes of the Papuan race. The shores are protected by coral reefs, while the channels between the islands are very deep.

New Britain consists mainly of two large, mountainous, and populous islands, the most westerly of which is about 50 miles E. of the shores of New Guinea. The larger island is supposed to have an area of 24,000 square miles. In the most northerly is a volcano in active operation. Extensive plains of great fertility stretch along the shores of both islands. The natives are of the Papuan race. They were discovered by Dampier in 1699; cocoa-nuts, sago, bread-fruit trees, yams, and ginger, are among their principal products.

NEW IRELAND, N.E. of New Britain, is about 200 miles long, by 12 miles broad. The surface is fertile, and the hills covered with forests. The inhabitants resemble the aborigines of Australia, are black and woolly haired, and extremely savage. The only articles of commercial value which the island produces are fancy-wood and tortoise shell.

ADMIRALTY ISLES, a group of one large, and numerous small islands, 150 miles N. of New Guinea, which they strongly resemble in natural products. The natives are a Malay race, of large stature, well-formed, and differing but little from Europeans; except in the colour of their skin, which is black, but not of the deepest shade.

PAPUA OR NEW GUINEA, next to Borneo, the largest island in the world, is situated N. of Australia, from which it is separated by the Arafura Sea and Torres Strait, 80 miles wide; while Dampier Strait divides it from New Britain, and Garewo Strait from the small island of Sallawatty. It extends from the equator to lat. 10° S., and from lon. 130° to 150° E.

In form it resembles a reptile with its back turned to the equator, and its belly to the Australian continent. Its extreme length, from N.W. to S.E., is 1200 miles; the extreme breadth is about 300 miles; while the supposed area is 240,000 square miles, and the pop. of the Dutch portion, 110,000 (in Dec. 1859). The most northern extremity is Cape Good Hope (lat. 0° 19′ S.); the most western Cape Salu; while the extreme S.E. point is named Cape Rodney. The coasts are deeply indented in the N.W. and S.E., but the coast-line has been explored but very imperfectly. Of the interior almost nothing is known to Europeans, except from the reports of the natives. Mr Alfred Wallace, an Englishman, resided for three months, in 1858, at Doreh harbour, situated on the western side of Geelvink Bay, a magnificent inlet on the N.W. coast; and the information which he has given regarding the country, though limited, is very valuable. He describes the climate as wretched in the extreme. During his stay in the island it rained almost incessantly, even though a large portion of the time he spent there was nominally the dry season. The interior is very mountainous—several summits in the western portion of the island rising to about 9500 feet, while in the other extremity they sometimes attain to an elevation of upwards of 13,000 feet. Dampier observed three active volcanoes. A large deltoid river, named the Rochussen or Ambernoh, enters the sea on the N.E. side of Geelvink Bay. The forests, which cover a large portion of the whole area, and line the mountain-sides to a great height, abound with gigantic trees of a great size, among which are the camphor-tree and sago-palm. Papua is the native region of the true aromatic nutmeg, and other spices are found in the woods. Both yams and cocoa-nuts are plentiful, as also rice, maize, and the sugar-cane. Gold is said to occur in many parts of the island. The only quadrupeds known to exist are dogs, rats, wild hogs, and some new species of marsupial animals. There are some very singular birds, including birds of Paradise, of which this is the native region, and a gigantic pigeon, nearly as large as a turkey. Cockatoos and parrots are also numerous; while, altogether, from 60 to 70 species of birds are known to naturalists. The inhabitants, who are of the same race as those of New Caledonia, New Ireland, and the Feejee Islands, are a negro race, resembling in some respects the negroes of Africa, but in others differing from them very widely. The hair, instead of being woolly, like the latter, grows in tufts which stretch out to an enormous length; while, both intellectually and socially, they are immeasurably behind the natives of Africa. They are hideously ugly, with large eyes, flat noses, thick lips, and a black shining skin. Their natural deformity is increased by their passing bones and pieces of wood through the cartilage of the nose. Politically, they are subject to the small island of Ternate, inhabited by an active industrious race of Malays. The Portuguese discovered the western part of Papua soon after they settled in the Moluccas, between 1512 and 1530. The Dutch made three voyages to the island, the first in 1828 and the last in 1835. In the latter they attempted to form a settlement on its shores, but they found the country so unhealthy that they abandoned it soon after. They claim possession, however, of the whole western half of the island, up to the 141st meridian. Doreh is the only place where the natives come in contact with Europeans; and there is an active and exclusive trade carried on between it and the Moluccas, under the Dutch flag, consisting of birds of paradise, pearls, gold, fine woods, raisins, bamboos, &c.

Arroo Isles, a group of islands in the Arafura Sea, south of New Guinea; they extend from N. to S. about 127 miles: the three largest are named Cobror (69 miles by 23), Trana (34 miles by 20), and Vorcay (21 miles by 10). To the east of the group is an extensive coral reef, where pearl and trepang are found. *Dobbo*, a town on the island Warud, inhabited by Dutch and Chinese merchants, is at present the greatest mart in the north of Australasia. The products comprise pearl, tortoise-shell, birds of paradise, and trepang or sea-cucumber (an edible animal of the Holothuria family). The inhabitants, 60,000 in number, are a mixture of the Malay and Australasian negro races.

Timur Laut, about midway between the Arroo Isles and Timor, is about 65 miles long by 25 miles broad. The surface is mountainous and wooded, and the coasts are surrounded by reefs and mud-banks.

MALAYSIA.

Malaysia, also called the Eastern, Indian, or Asiatic Archipelago, forms the N.W. division of Oceania, and is the largest collection of islands on the globe. Malaysia is situated on both sides of the equator, between Further India and China on the one side, and the continent of Australia and New Guinea on the other, having the Chinese Sea and Strait of Malacca on the N., the Indian Ocean on the W. and S., and the Pacific Ocean on the E. Lat. 11° S. (Sandalwood) to 21° N. (Bashee Islands); lon. 95° 20′ W. (Sumatra) to 131° E. (Ceram).

The area of the entire Archipelago is roughly estimated at 853,000 square miles, and the population at about 23,000,000. Malaysia is subdivided into seven principal groups—viz. 1. The Sunda Islands, in the W. and S.; 2. Borneo; 3. The Celebes; 4. The Moluccas or Spice Islands; 5. Sanguir, Salibato, &c.; 6. The Sooloo Archipelago; 7. The Philippine Isles. All these groups are more or less of volcanic origin, and exhibit at the present time active volcanoes in numerous localities. The older formations, however, are also found forming the basis of many of the islands. Mountain-ranges of considerable height, as well as isolated mountains, are very prevalent, the elevation ranging from 5000 to 15,000 feet. Mount Kassoumba, in Sumatra, the culminating point not only of Malaysia, but of all Oceania, is said to attain an elevation of about 15,000 feet. Gold is generally diffused throughout the islands, and several of them contain silver, tin, copper, and iron. Diamonds are found in Borneo; sulphur is abundant, as also lignite, naphtha, and asphaltum. Coal is found in Luzon, and salt is procured from springs in Java. The climate, though tropical and moist, is moderated by the surrounding seas. The hills are clothed with forests of the most valuable trees, and the plains yield the richest plants and spices in spontaneous abundance. Palms, bamboos, rattans, teak, ebony, sandalwood, sassafras, arica, and resinous and gum-bearing trees, together with cloves, nutmegs, aromatic trees, pepper, ginger, cotton, tobacco, sugar, sweet potato, and numerous fruits, are very plentiful. The grains cultivated in the larger and more civilised islands are maize, millet, pulses, and rice; but in the others, sago forms the chief food of the inhabitants. The fauna embraces the elephant, tiger, panther, deer, wild hog, rhinoceros, and many species of the monkey and orang-outang. The ox and buffalo are used for agricultural purposes. Birds of numerous kinds and beautiful plumage fill the woods. Tortoises are numerous in the eastern portion of the Archipelago; while fish, trepang, oysters, and other shell-fish, are common. The aborigines consist of two distinct races of men—the Malay, who form the great bulk of the population, and the Papuan or black race. The former are characterised by a light-brown or olive complexion, long straight hair, short stature, and robust body; are strong and active in their habits; in some localities considerably advanced in civilisation, in others roving pirates. The Malayan language is widespread, extending not only over the Malaysian

Archipelago, but also throughout New Zealand, Polynesia, and the Malay Peninsula. It is soft and harmonious in pronunciation, simple and easy in its grammatical system, plain and natural in the construction of sentences, and there are few, if any, of its sounds which cannot be readily articulated by Europeans. Though possessing some distinctive characteristics of its own, a considerable portion of its vocabulary is borrowed from the Sanscrit, while it has been greatly influenced and modified by the Arabic. It possesses a written literature which, however, is greatly inferior to that of either the Hindoos or Chinese. The Papuans have negro features and curly hair, are of small stature, and a spare puny form, less civilised than the Malays, and in many of the islands they inhabit the interior of the country is in a state of barbarism. Mohammedanism is the prevailing religion; the Hindoo faith is professed by a portion of the natives; while Christianity has been introduced into the European settlements. Politically the Archipelago is held by a number of independent native chiefs, and by the Dutch, Portuguese, Spanish, and British.

The Sunda Islands, in the W. and S. of Malaysia, separate the Indian Ocean from the seas of China and Java, and embrace Sumatra, Java, Bali, Lombok, Sumbawa, Sandalwood, Floris, Solor, Wetter, Timor, and numerous smaller islands on both sides of Sumatra.

SUMATRA, the most westerly of the group, and, next to Borneo, the largest island in Malaysia, is situated to the S.W. of the peninsula of Malacca, from which it is separated by the Strait of Malacca, 25 miles broad. It is divided by the equator into two nearly equal parts. The length from N.W. to S.E. is 1100 miles; average width, 160 miles; probable area, 130,000 square miles. The population numbers from 2,000,000 to 3,000,000, who are mostly Malays, the remainder being for the most part of the Papuan negro race. It is traversed in the direction of its greatest length by a chain of lofty mountains which culminates in Mount Kassoumba under the equator, 15,000 feet high. Several of the loftier summits are volcanoes. The eastern half of the island is mostly level or undulating, and along the coasts are many sandy and marshy plains traversed by rivers of considerable magnitude. The climate in the plains is less oppressive than might have been expected, the thermometer usually ranging at noon from 82° to 85° Fah. Frost, snow, and hail, are unknown; but thick fogs, thunderstorms, and waterspouts, are frequent. There are two seasons, the rainy and dry. As the island stretches across the direction of the monsoons, the mountain-chain arrests all the vapours, and hence rain falls almost incessantly in the south part of the island. The soil is exceedingly fertile, and the minerals comprise gold, tin, copper, iron of superior quality, sulphur, naphtha, and in the S.W. an inferior kind of coal. Much of the island is occupied by dense forests, which contain an inexhaustible store of timber and fruit-trees, and the vine is successfully cultivated by European colonists. The principal articles of export are, pepper to about 3,000,000 lb. yearly, gold-dust, sulphur, camphor, and gutta-percha. The fauna resembles that of the other islands in Malaysia. In the N. and E. are several petty native states, the chief of which are Achen and Siak; but the Dutch, who effected a settlement here in 1649, are now the masters of nearly all the territory south of the equator, their principal settlements being *Padang* and *Bencoolen*, on the W. coast.

JAVA, the most important and populous island in Malaysia, and the chief seat of Dutch power in the East, is situated S.E. of Sumatra, from which it is separated by Sunda Strait. The sea of Java, on the N., divides it from Borneo, and its S. shores are washed by the Indian Ocean. Area (including the contiguous island, Madeira) 52,000 square miles; population (in 1853) 9,943,000; of whom about 17,000 are Europeans, Chinese 125,000, and the remainder Arabs, Bughis, and Orientals. It is traversed, in the direction of its greatest length, by a mountain-chain, which has a mean elevation of 1000 feet; but many volcanic cones rise to 10,000 feet. Volcanoes are, indeed, more numerous in Java than in any other country of equal extent in the world, and volcanic phenomena are often displayed on the grandest and most terrific scale. The soil is extremely fertile; the N. coast is flat and marshy. The climate is characterised by great heat in the plains, and by numerous earthquakes and thunderstorms; the higher grounds are cool. The rainy season extends from December till March. Minerals comprise iron, tin, salt, sulphur, and nitre. The range of vegetation is very great, embracing the palms of the tropics and the mosses of the temperate zone. The coast is fringed with cocoa-nut trees; behind them the ground rises gently to the foot of the mountains, and is completely cultivated. The far-famed *upas* tree flourishes in the woods, and speedily destroys life if its juices gain access to the animal system, but it neither poisons the air nor injures the surrounding vegetation. Java is the granary of the Asiatic Archipelago, and is supposed to be capable of supporting many times its present amount of population, only about one-third of the surface being under culture. Rice is the principal grain, and is cultivated all along the coast. Coffee, which is raised in most of the uplands, is the great staple of export; while indigo, tobacco, cotton. cinnamon, maize, pulses, vegetable oils, cocoa, and sago, are other principal products. Including domestic and marine animals, one hundred species of mammalia inhabit Java. Though so close to Sumatra and the Malay Peninsula, neither the elephant nor the tapir are found in it. The ornithology is rich and varied; almost all the known generic groups of rapacious birds are found in great numbers, and gallinaceous fowls are plentiful. One of the most remarkable places in the world is the *Guero Upas* or "Valley of Death," near Batour, in which neither animal nor plant can live, owing to the emission of carbonic acid gas from the surface. The Javanese are of the Malay family, and profess Mohammedanism mixed with Buddhism. Three dialects of the Malayan are used, besides an ancient sacred language. They possess a national literature, and translations from the Sanscrit and Arabic, and are superior in civilisation to the inhabitants of Malaysia generally. Java was under Hindoo supremacy until 1479, when it was conquered by the Arabs; but the island contains numerous remains of ancient art and grandeur—ruins of cities, temples, and other edifices, of which no other memorial survives. Three-fourths of Java belong to the Dutch, whose first settlement here was formed in 1575. *Batavia*, on the N.W. coast, is the capital of their possessions, not only in Java, but in the East Indies generally. It is a highly important commercial town, with 118,000 inhabitants. *Samarang* (22,000), and *Sourabaya* (60,000), both on the north coast, also belong to the Dutch, and are highly flourishing cities. There are several native states in the interior under Dutch protection; the capitals of the chief of these are *Solo* or *Soerkarta*, and *Yugyacarta*, both of which are large and populous. Nearly all the exports of Java consist of vegetable produce, the principal articles being coffee, sugar, indigo, and rice. Almost the whole of the commerce is carried on with the Netherlands, by means of the Dutch East India Company; but there is regular steam communication with Singapore.

BALI, LOMBOK, TIMOR, and the other islands of the Sunda group, stretching in a long chain to the eastward of Java, and separated by narrow channels, though containing numerous native states, are subject to the Dutch, except the islands of Solor and Timor, in which the Portuguese have established settlements. *Dilli* or *Delly*, the capital of the Portuguese portion of Timor, is situated on the N.W. coast; while *Coepang*, in the S.W., is the principal Dutch settlement. The area of Timor is 8800 square miles; population, 200,000.

The Borneo Group.—Comprising the large island of Borneo, in the centre of the Malay Archipelago, with Labuan on the N.W. coast, and Natuna and Anambas between it and the Malay peninsula.

BORNEO, about 160 miles N. of Java, from which it is separated by the Java Sea, and 175 miles E. of Cape Romania, the S. extremity of the Malay Peninsula, was discovered by the Portuguese in 1521. It is the largest island on the globe, having a probable area of 300,000 square miles, or nearly four times the size of Great Britain; but the population, estimated at 2,480,000, is greatly less than that of Scotland. The N.W. coast has been sufficiently surveyed; but the E., S., and W. coasts, with the exception of a few spots, remain quite unknown, as also nearly the whole of the interior. Borneo is divided by the equator into two nearly equal divisions; but owing to the influence of sea-breezes, the climate is more mild and healthy than in other parts of the archipelago. It is traversed by two ranges of mountains, which have a general direction of S.W. and N.E. The loftiest of these, being that nearest the Asiatic continent, attains its highest elevation in Kini Balu, 13,698 feet above the sea-level. The principal rivers are the Borneo, Seriboe, Batang Lopar, and Sarawak, flowing into the Chinese Sea; the Pembuan, Sampet, Mendawa, and Cahajan, into the Sea of Java; and the Koctei and Berou into the Strait of Macassar. Most of these are navigable. The only lake of importance is that of Kini Balu, 35 miles long by 30 miles broad. Borneo is noted for the abundance of its valuable minerals, especially for its diamond mines at

Landak, 15 miles N.E. of Pontianak. The gold of Sambas yields about half a million sterling annually. Excellent coal, said to be superior to that of Newcastle, is wrought in Borneo proper, Banjarmassin, and Sarawak. Valuable mines of antimony occur in the province Sarawak; while iron, tin, copper, and platina, are found in numerous localities. The flora is of the most varied and gorgeous description; but in common with the fauna, differs so little from the rest of Malaysia, that the details need not be enumerated. The orang-outang, however, is peculiar to Borneo and Sumatra, while the *potamophilus barbatus*, a carnivorous mammal, resembles at once the otter and ornithorhynchus. Cultivated plants embrace maize, rice, yams, batatas, cocoa-nut, tobacco, cotton, sugar-cane, betel-nut, pepper, and other spices. The inhabitants belong to four races—the aborigines, Malays, Chinese, and Europeans. The aborigines, who are named Dyaks or Dajaks on the west coast, but on other parts of the island receive the designation of the river on which they reside, are supposed to belong to the Horafores, or Arafouran variety of mankind; for, while greatly differing in physical aspect from the Malays, they considerably resemble the natives of the Celebes and of the Australian continent. Specimens of the principal dialects spoken by the numerous tribes into which the nation is divided, have been collected by Sir James Brooke and Captain Keppel, and it has been ascertained beyond a doubt that these dialects collectively form a link in the great chain of Malayo-Polynesian languages. The Malays have established themselves in great numbers on the coasts and navigable rivers, where they occupy themselves in commercial, but frequently also in piratical, pursuits. The Chinese are very industrious, and conduct exclusively the mining business of the country; while the Europeans are for the most part Dutch and English traders. The island is divided into numerous separate states, governed by native chiefs, who are nearly all subject either to England or the Netherlands. About two-thirds of the island, comprising the entire centre and south, are tributary to the Dutch, who have here two residences—viz. that of the south and east coast, capital, *Banjarmassin*, in the S.E., on the river Banjar, near its mouth on the Java Sea; and that of *Pontianak*, on the W. coast, the capital of which has the same name. The principal coal and diamond mines of Borneo are found in the vicinity of these towns. The province of Sarawak was purchased from the native chiefs by Sir James Brooke, in 1842, and formally ceded to the British government by the sultan of Borneo in the year following. The province of Borneo Proper, which extends over the level space on the N. coast, is also tributary to Great Britain. Its capital, *Borneo* or *Bruni*, formerly the metropolis of a large independent kingdom, is built on piles in the mouth of the river of same name, and contains a population of about 20,000. It was taken by the British in 1846, and the small island, *Labuan*, 30 miles farther N., a few months afterwards. The latter contains a colony at Victoria, has a harbour, and extensive mines of excellent coal.

The Celebes Group, including the large island Celebes, together with Panjasang, Bouton, Xulla, &c., to the S. and E. of it, is situated to the E. of Borneo, from which it is separated by the Strait of Macassar.

Celebes, the only really important island of the group, has an area of about 73,000 square miles, and a population of about 2,000,000. The shape is extremely irregular, the island being broken up into a series of peninsulas. The surface is greatly diversified, but is mountainous in the centre—the highest elevation of which exceeds 7000 feet in height—several volcanoes occur in the N. and S.; while in the sublimity of its scenery, it is said to surpass any other island in Malaysia. The climate is healthy and agreeable, though hot in the low grounds. Minerals comprise diamonds, gold, copper, iron, salt, and sulphur. The forests, though not extensive, contain a great variety of trees, from one of which, the *badeau*, the well known Macassar-oil is extracted. The trepang fishing, and the catching of turtle, occupy thousands of the natives, who consist of several races—the Horafores, in the centre, allied to the aborigines of Australia; the Bughis, on the coasts, who are a maritime commercial people, more resembling the Polynesians than the Malays; and the Badjus or "Sea Gipsies," who constantly reside in their ships, and carry on extensive commerce with China, to which they export cotton, edible birds' nests, tortoise-shell, and pearls. Celebes was discovered by the Portuguese in 1512; but in 1660 they were expelled by the Dutch, who continue to control the island. Their principal establishments are *Menado*, in the N.E., and *Macassar*, near the S.W. extremity. *Boni*, E. of Macassar, is regarded as the native capital.

The Moluccas or Spice Islands, comprising Bouro, Amboyna, Ceram, Banda, Gilolo, &c., form a widely scattered group, lying between Celebes and New Guinea. Area, about 38,000 square miles; population, unknown, but the portion under the Dutch, in 1856, contained 536,000 inhabitants.

The Moluccas are mountainous, volcanic, subject to earthquakes, and very fertile, producing nutmegs, cloves, and other spices, fine woods, and a great variety of fruits. On the coast are numerous pearl and trepang fisheries. These islands are, for the most part, subject to the Dutch, whose chief seat of power is at *Amboyna,* which, next to Batavia, is the principal station of Dutch commerce in Oceania. The people consist of Malays, Papuans, Chinese, Japanese, and some Europeans.

The Sanguir or Sangir Group, consisting of an archipelago of 46 small islets, is situated in the Celebes Sea, north-west of Gilolo.

SANGUIR, the largest island in the group, contains about 250 square miles, and 12,000 inhabitants. It is mountainous, and has a volcano in the centre.

The Sooloo Archipelago, in the Celebes Sea, between Borneo and the Philippine Isles, consists of a group of above sixty islands, the principal of which is Cagayan, in the centre.

The area is about 450 square miles, and the aggregate population 200,000. They are under the authority of a native Sultan, whose capital is *Soong,* in Cagayan. These islands are rich in pearls and fruits; but the inhabitants, who are Malays, are noted for their piracy.

The Philippine Isles, an extensive archipelago in the extreme north-east of Malaysia, separated from Further India on the west by the Chinese Sea, and from Borneo and Celebes on the south by the Celebes Sea. Lat. 5° 32′—19° 38′ N.; lon. 117°—127° W.

The group consists of about 1200 islands and rocks, but only 408 are inhabited, of which Luzon, Mindanao, Palawan, and Mindoro, are the largest. The area and population are estimated very variously; but probably the former is about 250,000 square miles, and the latter from 5,000,000 to 6,000,000. The area of the Dutch portion amounts to 52,148 square miles, and the population to 2,679,500. The islands are of volcanic formation, and numerous active volcanoes exist in the mountainous regions. The surface is rugged, and interspersed with numerous rivers, marshes, and lakes. Being situated within the range of the monsoons, the climate is moist, and hurricanes are frequent. The high temperature and abundant moisture produce a luxurious vegetation, the character of which is not very different from that of Malaysia generally. The tobacco raised here is of the finest description, and the cigars of Manilla have obtained a wide celebrity, while sugar and rice are extensively exported. The mineral products are abundant, comprising coal, sulphur, alum, magnesia, and marble; and the fauna, which in general resembles that of the other islands of Malaysia, embraces foxes, gazelles, monkeys, and crocodiles. The aborigines are of diverse origin, but belong, for the most part, to the Malay race and the Oceanic negroes. The Tagala and eleven other dialects are spoken, while the religion is partly Mohammedan and partly heathen. *Manilla* or *Manila,* on the south-west coast of Luzon, is the capital of the Spanish possessions in the east. Its population, including the suburbs, amounts to 140,000, and its commerce with India, China, America, and Great Britain, is extensive. *Selangan,* in Mindanao, is the residence of a Sultan, whose authority extends over the greater part of that island.

MICRONESIA.

Micronesia, formerly reckoned a part of Polynesia, comprises the north-east section of Oceania, consisting of the numerous groups of small islands which stud the North Pacific Ocean, from the equator to lat. 28° N., and from the Philippine Isles on the west to the Sandwich Isles on the east. Area, 10,000 sq. m.; pop., 250,000.

Except Hawaii, the largest island in this or the following subdivision of Oceania, the most considerable of the islands range from 20 to 60, or 100 miles in circumference, while many do not exceed a mile or two in length. With the same exception, they are of very moderate elevation, and either of coralline construction, or surrounded by coral reefs. The climate is salubrious and agreeable, being tempered by cool breezes from the ocean, while the vegetation is gorgeous in the extreme. The natural productions comprise the bread-fruit tree, cocoanut palm, banana, plantain, sugar-cane, taro-root, and numerous other edible roots and fruits, besides the European vegetables which have been introduced. When first visited by Europeans, these islands, in common with those of Polynesia Proper, contained no quadrupeds except hogs, dogs, and rats; but the woods contain numerous gallinaceous birds, and others of splendid plumage; while the sea teems with excellent fish, which, in some of the groups, constitute the main food of the people. The inhabitants belong almost exclusively to the Malay race, are of a dark brown colour, use little clothing, practise *tattooing*, and are averse to regular industry. Their religion was Polytheism, embracing a belief in a future state; and their priests, who also acted as physicians, possessed an immense influence among them, as is evidenced by the singular institution of *Taboo*. Whenever a priest chose to utter this word over any object, the owner was obliged to renounce all further claim to it. If his house was *tabooed*, he durst not again enter it. The numerous languages spoken in all the islands of Polynesia and Micronesia are to be regarded as dialects of the Malayan. Till European missionaries introduced the Gospel, the grossest barbarism, licentiousness, infanticide, and cannibalism, prevailed throughout all Micronesia and the South Sea Islands. Though they had made little progress in civilisation, agriculture of a very imperfect description was universally practised; while their skill as fishermen was extraordinary, considering that their canoes were formed without iron tools, and that their fish-hooks were made of bones, shells, or hardwood.

DIVISIONS.—Micronesia embraces the following principal groups:—The Bonin Islands; Ladrone or Marianne Islands; Caroline and Pelew Islands; the Marshall or Mulgrave Archipelago, including the Gilbert group; and the Sandwich Islands.

THE BONIN ISLES, in the north-west of Micronesia, and about 500 miles south-west of Jeddo, in Japan, consist of a group of eighty-nine small islands, the largest of which are Peal and Kater Islands, at the former of which English and other Europeans, engaged in the whale fishery, are settled. The northern islands are inhabited by a Japanese colony.

THE LADRONE OR MARIANNE ISLES, a group of seventeen large and numerous small islands belonging to Spain, are situated about 1400 miles east of the Philippines. Only five of them are inhabited, which contain a population of about 10,000. They are of volcanic origin; their general aspect is beautiful and picturesque, the soil very fertile, and the productions are cotton, indigo, rice, sugar, and the plantain. The inhabitants are mostly of Spanish descent, the native races having almost disappeared. The largest island, named Guahan, is forty leagues in circuit, and contains the town *Agagna*, which is the capital and seat of government. They were discovered by Magalhaens in 1521, and called by him *Ladrones*, signifying *robbers*, owing to the thievish propensities of the inhabitants.

THE CAROLINE AND PELEW ISLANDS, also termed the new Philippines, commence with the Pelew Islands, 550 miles east of Mindanao in the Philippines, and extend eastward over a space of about 2000 miles. They were discovered by the Spaniards in 1543, and named in honour of Charles II. of Spain. The Carolines contain several small groups, as the Pelew, Yap, Mortlock, and Duperry Isles. They are all of coralline formation except the Yap group, which is mountainous, and abounds in the precious metals. The climate is mild and agreeable, while the productions resemble those of Micronesia generally. The inhabitants are chiefly Malays, are skilful navigators, and subsist chiefly on fish and cocoa-nuts. They belong nominally to Spain, but contain no Spanish settlement.

THE MARSHALL OR MULGRAVE ARCHIPELAGO, considerably to the east of the Caroline group, consists of several distinct groups of low coral islets, about midway between Papua and the Sandwich Islands. The principal clusters are named the Gilbert Islands, Radack Island, Ralick Island, Piscadoras, Mulgrave Island, and the Marshall Islands. The climate, productions, and inhabitants, do not differ from the rest of Micronesia. The Gilbert Islands contain about 60,000 inhabitants.

SANDWICH ISLANDS, the most important group of islands between Malaysia and the American continent, are situated about 3000 miles W. of Mexico, and about the same distance N. E. of New Guinea. Lat. 18° 50′—22° 20′ N.; lon. 155°—160° W. The islands are thirteen in number, but only eight are inhabited, the chief of which are Hawaii or Owyhee, Maui, Oahu, and Kanai. The area is estimated at 6000 square miles, and the population (in 1853) at 73,228. When Captain Cook discovered the islands in 1778, he estimated the population at 400,000. The causes of this extraordinary decrease are mainly measles, hooping cough, and similar diseases introduced by Europeans, and the great number of young men who leave their country in whalers and other ships, and never return. The Sandwich Islands are all high, steep, mountainous, and of volcanic formation. Hawaii, the largest of the group (4500 square miles), contains two stupendous summits—viz., Mowna Kea, 13,953 feet high, and Mowna Loa, 13,760 feet. The latter is studded with about fifty cones, from many of which smoke and flame are continually issuing. The climate is mild and salubrious, mean temperature 75° Fah. The range of the thermometer is very small, the rains are moderate, and in general the country is one of the healthiest on the globe. Gold has been discovered in Hawaii, and salt in Oahu. A good building material is obtained from the coral reefs on the west side of the group. Wheat is raised in the uplands (which, however, are better adapted for grazing than for agriculture); and in the valleys, coffee, sugar, cotton, arrow-root, cocoa, bread-fruit, and various European and West India fruits. Swine and poultry are very numerous, and horses, asses, cattle, and goats have multiplied greatly since their introduction. The natives, who belong to the light-coloured Oceanic stock, are a mild, docile, improvable race, who have very readily adopted the manners and customs of civilised life. Their language very closely resembles those of Tahiti and New Zealand. It was first reduced to a written form by the American missionaries, and contains only twelve letters—viz. five vowels and seven consonants. In 1819 the King publicly abolished idolatry, and embraced the Christian faith. Since then the Scriptures have been printed in the native tongue, churches and schools have been built, and constitutional government established. The islands are well situated for trade, being in the route between America and China, and constant communication is maintained with San Francisco. A treaty of friendship, commerce, and navigation between Her Majesty the Queen of Great Britain and the King of the Sandwich Islands, was signed at Honolulu in 1851. In 1853 the value of the imports was 1,281,000 dollars, and of the exports, 281,599 dollars. *Honolulu*, in the island Oahu, is the capital and principal port; population 7000. Many citizens of the United States reside in these islands, which are greatly under the guidance of American influence.

POLYNESIA, OR SOUTH-SEA ISLANDS.

Polynesia forms the S. E. part of Oceania, embracing the numerous archipelagos and islands south of the equator that lie between Australasia and the 110th degree of W. longitude. Pop. 308,000.

For an account of its general features, natural productions, race of people, religion, and languages, we refer the reader to our article on "Micronesia," the characteristics of which are almost identical with those of Polynesia.

DIVISIONS.—Beginning at the W. extremity, the following are the principal groups:—the Feejee Islands; Samoa or Navigators Islands; Tonga or Friendly Islands; Hervey or Cook's Islands; Society Islands; Austral Islands; Low Archipelago; and the Marquesas.

FEEJEE ISLANDS.—A group of about 200 small islands (450 miles E. of the New Hebrides), of which only 65 are inhabited. The population is estimated at 133,000. The two largest are Ambou or Na Viti Levu, eighty-five miles long by forty broad, and Paou or Vanoua Levu, ninety-five miles long by twenty-five broad. Some of the islands are mountainous, and all of them are supposed to be of volcanic origin. The soil is fertile, and fruits of various kinds, especially the bread-fruit, of which there are nine different varieties, and palms, are abundant. The natives are chiefly Papuans, a race which does not extend farther east; they are fierce and warlike, but possess considerable skill in domestic arts; their canoes are superior to those of most of the South-Sea islands. Many of them have been converted to Christianity, while the remainder continue to practise cannibalism and human sacrifices. The islands were discovered by Tasman in 1643. They produce sandalwood in abundance.

managed, are situated about 450 miles N. E. of the Feejee group. Area estimated at 2650 square miles; population 60,000. They consist of eight islands, the largest of which are Savaii (700 square miles), Opolu, and Tutuila. They are mountainous and of volcanic formation, but surrounded by coral reefs. The soil is rich, the surface densely wooded, and the productions similar to those of the neighbouring groups. The inhabitants are Malays, and were very ferocious till Williams, the missionary, visited them in 1830, when many of them embraced Christianity. They are now fast advancing in civilisation.

Tonga or Friendly Isles, S. E. of the Feejee Isles, consist of three clusters, of which the Tongataboo group is the largest. The population is about 18,000. The island Tongataboo, the most southerly of the archipelago, is 50 miles in circumference. They were discovered by Tasman in 1643, but received their collective name from Cook, on account of the hospitality shown him by the natives, who, however, are now known to be deceitful and treacherous. They are of the Malay race, and are copper-coloured, handsome, and brave. The first missionaries sent here were massacred, but of late years others have met with considerable success. The islands are all low and of coral formation, but contain two active volcanoes. Cocoa-nut oil is almost the only important export.

Hervey or Cook's Islands, E. of the Friendly Islands, embrace the scattered islands of Rarotonga, Atui, Mangeia, and several others, nearly all of them lofty and volcanic, but small and unimportant. They were discovered by Cook in 1773; but Rarotonga, the largest of them, was first made known by the missionary Williams, who laboured here with singular success. The population, who are estimated at 50,000, are of the Malay race.

Society Islands, N. E. of the Hervey group, consist of about 10 conspicuous isles, all of them lofty, volcanic, fertile, and surrounded by coral reefs, against which the vast waves of the Pacific break with terrific grandeur. Tahiti, the largest of the group, contains an area of 600 square miles, while the population of the archipelago is estimated at 16,000. Tahiti, the "gem of the Pacific," is extremely beautiful, contains mountains 10,000 feet high, and clothed to the summits with a rich and luxuriant vegetation. Its principal town and port is *Papiete*, which is resorted to by whaling vessels; while the exports consist of pearls, pearl shell, cocoa-nut oil, sugar, and arrow-root. Tahiti was forcibly taken possession of by the French in 1846, who now claim a protectorate over this group, together with the Gambier and Wallis Islands. It was to the Society Islands that the first messengers of the Gospel to Polynesia were sent, and from their shores successive missionaries have sailed to the neighbouring isles.

The Austral Isles, so called from their position south of Tahiti, are lofty, fertile, and beautiful, and contain about 1000 inhabitants, who closely resemble those of the Society Isles.

The Low Archipelago, E. of the Society group, consists of an immense number of coral islands, only slightly raised above the surface of the ocean, rendering the navigation intricate and perilous. The Gambier Islands, however, in the S. of the Archipelago, and Pitcairn Island, further eastward, are high and volcanic. Very few of them are inhabited, the population of the whole probably not exceeding 10,000. Pitcairn Isle is of interest as the refuge of the mutineers of the "Bounty" in 1789. That ship was conveying the bread-fruit tree from Tahiti to the West Indies when the crew mutinied, and, taking to themselves Tahitian wives, formed a settlement on Pitcairn Island. Captain Beachy visited the island in 1825, and found that, of the fifteen original male settlers, twelve had died by violence, one by accident, one naturally, and one survived.

THE MARQUESAS lie on both sides of the 10th parallel of S. latitude, about 900 miles N. E. of Tahiti, and 2000 miles S. E. of Hawaii. They comprise thirteen islands, the largest of which is Nukaheeva, with an area of 200 square miles. The population of the group is supposed to be about 20,000, while the French estimate the area at 508 square miles. They are of volcanic formation, with mountains rising to a height of 5000 feet; while the interior is fertile, producing yams, pulse, cocoa-nuts, sugar-cane, and wild cotton. They derive their name from the Marquis de Mendoza, viceroy of Peru, who sent out Mendana, their discoverer, in 1595. The inhabitants are Malays, and are the least civilised of all the natives of Polynesia. They carry on war with the most savage ferocity, and practise cannibalism. The French, since 1843, have occupied the two largest islands, and claim the whole group as a colonial territory.

ANTARCTICA.

Such is the name given to those extensive tracts of land, recently discovered within the Antarctic Circle, by British, French, and American navigators, and supposed to form portions of a great continent round the South Pole. As the leading features of this inhospitable region have been described in our remarks on the "Antarctic Ocean" (p. 25), we here merely remark, that should the explored tracts be found to be continuous, and the existence of a Southern Continent put beyond doubt, we shall then have seven continents—viz., Europe, Asia, Africa, North America, South America, Australia, and Antarctica; and seven corresponding oceans—viz., the Arctic, North Atlantic, South Atlantic, Indian, North Pacific, South Pacific, and Antarctic Oceans!

THE END.

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ABBREVIATIONS.

Arch. Archipelago; *B.* Bay; *Ch.* Channel; *C.* Cape; *Est.* Estuary; *Fr.* Frith; *Ft.* Fort; *Gt.* Great; *G.* Gulf; *Gl.* Glacier; *Hd.* Head; *Hr.* Harbour; *I.* Island; *Is.* Islands; *Isth.* Isthmus; *L.* Lake or Loch; *Lr.* Lower; *M.* Mountain; *Mts.* Mountains; *Pen* Peninsula; *Pt.* Point; *R.* River; *Sd.* Sound; *Str.* Strait; *Up.* Upper; *S.* South; *E* East; *N.* North; *W.* West.

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